Computer Weekly
Thursday, April 8, 1982

Amdahl to double power of his rivals

by Knvin Cahlll

WITHIN three years, computer pioneer Genc Amdahl plans to deliver a world-leading new mainframe, with twice the processing power of the nearest competition.

Last week in London, Dr Amdahl gave Computer Weekly a first glimpse of the technical specification of bis new machine, before flying out to cut the first sod for the new factory that will produce it in Ireland.

Most of the details of Dr Amdahl's new company, Trilogy, are still secret, but he revealed that the machine would, like the Estriel line for ICL, have a quadded processor. Its vector processing capability would approach that of the Cray 1 supercomputer, while ordinaary processing capability would be twice that of any machine programmed for delivery in '84/'85.

The machine would be water cooled and would run the IBM operating system OS directly, though he anticipated some changes to the IBM compiler.

Dr Amdahl said the first pass on the full design had already been made. This included a good part of the CAD, and most of the memory and channel engineering.

This meant that the bulk of the project to deliver the computer into production in latn 1984 was ahead of schedule, he said.

Dr Amdahl has so far raised $160 millioa for the design phase of the Trilogy project, while the Irisb government has sunk $20 million in grants for the new plant.

BT cuts prices 90% on private Prestel

by Donald Kennett

BRITISH Telecom has responded to competition to Prestel by dramatically cutting costs and boosting capacity for its private viewdata service. Closed user groups, or companies which usc Prestel for private communications systems, will have tariffs cut by 90%, and the number of user groups thst can be accommodated will jump from 50 to 32,000.

There has been a great surge in demand for private viewdata in the last few months, a Prestel spokesman said, but there has also been increased competition from privately rua bureaux and in-house systems.

The annual charge for Prestel's closed user groups drops to £250 from £2,500. Normal access and storage are still charged on top of that.

The Gateway service which links Prestel to databases held on private computers is now up on two Prestel computers, both in Croydon, but will be available oa its other six computers by the end of this year. Six information providers are due to connect their computers via the SwitchStream I packet switched network over the next eight weeks.

Hatfield Polytechnic last week became the first information provider to get its gateway connected. It was also the first SwitchStream I user to have its system connected late in 1980. It will use the gateway to make educational information available to Hertfordshire schools through Prestel's pages under the title "Herts 288".

Considerable demand has built up for Gateway links, Prestel's spokesman said, and after the first few links have been properly tried be said a steady stream of Gateway applications will start coming into service.

Gateways are also to be implemented to other national viewdata systems over the next couple of years. Some of them will possibly start up this year. Agreements in principle have been reached with Holland, West Germany, Hong Kong, Italy and Austria.

The last major enhancement was the addition of the Mailbox message passing facilities late in 1981. They will only be accessible by trunk call to one of the London computers until Panda, Prestel's advanced network, is introduced next year.

There are currently 280 Prestel users overseas who access the system by international phone call or via the Jefferson Prestel computer in Boston in the US. Shell uses its closed user group both from Holland and the UK to pass messages and distribute information.

● Gatewny will be a central feature of a demonstration of the Prestel system by GEC Computers at the 1982 World's Fair in Knoxville, Tennessee. In collaboration with Financial Interstate Services, GEC will demonstrate home banking applications, and shopping and meosage pasaing applications. Two hundred terminals will be on the exhibition site and at hotels, banks and bus atations in the areo. Financial Interstate will market its Prestel-based Bank-At-Home system.

SWEETBAUM . . . resigned following disagreement with NEB.

DRI boss resigns after row with NEB

by Boris Sedacca

THE head of DRI, the State-owned peripherals manufacturer, has resigned following a row with the NEB over its investment in start-up company United Peripherals.

The row centres on the posaible privatisation of DRI at a price depressed by buge costs at United Periphals, which have yet to be fully explained.

Henry Sweetbaum has been replaced as chairman by Peter Gregory, a director of Cadbury-Schweppes. At least one other director, Sanford Kaplan, a non-executive director, has left in a major boardroom resbuffle.

Three new directors join the board of the company which is expected to make losses of about £10 million in the current financial year.

Cbristopber Birka, deputy director of the electronic and information technology division of the British Technology Group, which has taken over the activities of the old National Enterprise Board, is one new director.

Peter Moyes and Dave [illegible] also join as non-executive directors.

John Armstrong will remain as managing director of the company.

In 1979 the NEB forced DRI into an investment deal in United Peripherals, which is 24% owned by Control Data, which manages the company.

The United Peripherals deal was kept secret and neither the price paid for UP's base at ICL's Winsford factory, nor the terms of the start-up, were disclosed.

The only available details came in the form of a single-line summary which appeared in the NEB's accounts last year.

In these accounts, the NEB [illegible] tributed DRI's £9.5 million loss for 1980/81 to the start-up costs of the joint venture with Control Data.

Sperry gets new chief

A COMPUTER man has taken over as chief executive at Sperry Corporation, whicb has recently suffered a severe slip in profits. He replaces Paul Lyet.

Gerald Probst, former president of Sperry Univae, the computer division of Sperry Corp, has now been appointed chief executive officer of the mother company, and will take over the role of chairman when Lyet retires in June.

Probst was also president and chief operating officer of Sperry Corp, and Lyet's number two. He joined Sperry Univae in 1961 as director of advanced development from his post as chief of the radio-inertial division in the airborne section of the US Army.

In February, Sperry Corp announced a 40% drop in profits for the quarter ended last December to $47.3 million from $79.4 million. A company spokesman said that recession combined with a weak dollar had badly hit the company's trading results, particularly in relation to overseas subsidiaries.

Prior to that, in mid-1981, Univae carried out a top-level reorganisatioo by moving its international division's senior management from London to Blue Bell in Pennsylvania.

One year ago, Sperry shares were trading ot $58 on the New York Stock Exebange. By the end of Marcb their value bad dropped to less than half at $28 a share.

PROBST . . . Lyet's Number Two is a computer man.

Camelot dead

● From front page

Existing DHSS mainframes at Blackpool and Newcastle will eventually be hooked into the system to give information on National Insurance and child benefits. But there are no immediate plans to link to the national benefit computers in Reading and Livingston.

One of the problems with Camelot was the structure and design of the programs, and Lessco's report suggested that the project put undue technical demands on DHSS staff. The new system will require standard communications systems, documentation, and programming techniques.

There are also plans to make greater use of microcomputers, particularly to fill the gap between now and LOP's implementation in 1986. A microcomputer welfare information service developed by Dr Nigel Gilbert of Surrey University could be linked into the system.

The trade unions, which are already at odds with the government over the introduction of new technology, are unlikely to be happy with the new project.

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NEWS BRIEF

Zeus Hermes bought by Enterprise

SOFTWARE group Zeus Hermes Investments has divested itself of its troubled main subsidiary, Zeus Hermes Ltd, which employed most of the staff within the group.

The sale of Zeus Hermes to the Enterprise Systems Group follows a restructuring of the Zeus Hermes Products subsidiary. Its marketing activities moved from ICL teleprocessing software to IBM end-user applications packages.

Datapoint cuts

DATAPOINT, the Texas-based computer and telecommunications equipment manufacturer, is to cut about 230 jobs from its US operation.

Magnuson deal

MEMOREX UK hss signed a deal with the troubled US plug-compatible manufacturer Magnuson to act as distributor for Msgnuson computers. Memorex will also service the 13 existing Msgnuson installations in the UK. Memorex has considerable experience with IBM compatible systems, being one of the first companies to enter that market.

GEC launch

GEC has launched a new company, GEC Information Systems, to spearhead the company's drive into the electronic office market. The new company will comprise GEC Computers, Reliance Systems, GEC Viewdata and parts of GEC Telecommunications.

AMDAHL . . . Optimistic.

Aiming for the top

WITH over £90 million in the kitty Gene Amdahl, father of the modern commercial computer industry, has ooce more embarked on o determined bid to oust IBM from the No 1 slot in the mainframe business. He is optimistic that his new machine will be ot least twice as fast as any other machine likely to be avsilable in 1984/85, and will have vector processing capabilities approaching those of the Cray 1.

Further review of Trilogy and the new computer, page 9.

HEWITT . . . "Government omits every system that actually causes people privacy problems."

Revolt on govt plans for data protection

by Rory Johnston

PRESSURE groups and politicians are in revolt over the government's proposals on data protection. Plans for legislation, which could still be two years away, were published in a much-delayed White Paper last week, which received a particularly stormy reception.

In the face of widespread dissatisfaction with the content of the Paper the National Council for Civil Liberties (NCCL) is setting up a working party to draft its own rival legislation and it is hoped to introduce a Private Member's Bill in the autumn.

The White Paper, says NCCL general secretary Patricia Hewitt, "omits every system that actually causes people privacy problems." She was referring to the exclusion from registration, proposed in the Paper, of systems used for solving crime or protecting national security.

She said the bulk of complaints received by the NCCL concerned manual systems which were not covered at all by the proposal.

The British Medical Association warned that doctors would refuse to co-operate with the police on such matters as case conferences on battered babies if police systems were exempt from privacy control. The exclusion of manual systems was also not acceptable for medical records, a BMA spokesman said.

The White Paper has been widely attacked for leaving too many questions unanswered.

Doug Eyeions, of the Computing Services Association, commented, "I am amazed it contained so little detail given the time it has taken to produce." The actual paper is only six-and-a-half pages long, and has been three years in gestation.

Government view..........P.2
Leader comment..........P.15

The lack of definition in the paper, Eyeions asserted, would lead to serious conflicts over interpretation. For instance, computer bureaux were to be covered, but what about word processing bureaux, he asked.

Forthcoming legislation sketchily outlined in the White Paper would require computer applications handling personal data to be registered, and the Registrar would be empowered to investigate them before accepting a registration. Systems would have to comply with the principles drawn up by the Younger Committee in 1972 regarding appropriateness, relevance and accuracy of data, and data subjects would in general have a right to see the information held about them.

There would, however, be exceptions for which special regulations would be drawn up, and in particular subject access would probably be restricted in the case of medical and social work files.

There might be an exception from registration for "small-scale users who keep data for domestic purposes," the White Paper says. The Registrar would be independent of the government, and would have a staff of about 20, including some computer experts. His running costs of about £500,000 a year would be met from fees charged to those who register.

Ted Cluff, of the Institute of Data Processing Management, described the White Paper as a "pathetic effort", and said his members would be asked to press for major changes. He could not accept that the Registrar would be generally independent, or that a right to take civil action against misuse of data could be a workable protection for the individual.

Govt sets up fifth generation study

by Boris Sedacca

JAPAN'S grand plans to develop a so-called fifth generation of supercomputers have led the government to set up a special study group which will examine the scope for collaborative research projects in information technology in the UK.

The announcement comes only one week after software house SPL said it would launch its own private initiative in the face of government reluctance to meet the Japanese challenge.

A team of British computer experts visited Tokyo late last year where the Japanese Ministry for International Trade and Industry presented plans for computer artificial intelligence and machines with the ability to communicate by speech.

The formation of the study group represents the first response by the government, and it has been given a brief to examine collaboration between both industry and academia to develop advanced software development systems, improvements in the man/machine interface, computer aided design and the interconnection of networks.

The 12-member group is made up of academics, industry experts and civil servants and will be headed by John Alvey, senior director of technology at BT.

SPL's private enterprise venture into fifth generation computers centres around a conference it is planning to hold early in July at which a number of academics and people from various associations around the world will speak.

The government is unlikely to commit large sums of money into its own collaborative research programme.

FAWCETT . . . Employees should retain ownership.

Workers in control at CMG

by Kevin Cahill

IT'S not quite a workers' co-operative, but the employees of software house CMG have gone £1.1 million in debt to the Clydesdale Bank to extend their ownership to over half of the company.

The scheme is a unique application of the provisions made in the 1981 Finance Act which enables employees to obtain guarantees for their purchase from the company whose shares they are buying.

The opportunity to buy the shares arose when Bryan Mills, a founder of CMG, decided to retire to a Palladian mansion in Ireland. The company, which has always been run on the basis that the employees who work for it also control it, put the option to the 650 staff of either selling the Mills shareholding on the open market, or buying it themselves.

More than 370 of the employees opted to own part of the company.

The philosophy of CMG's founders Bryan Mills, Bob Fawcett and Doug Gorman, has always been that the employees should retain ownership of the company. But until Mills sold out the founders held 56% of the company between them.

This has now been reduced to 46%.

INSIDE THIS WEEK'S ISSUE

Individuals will have access to their own data – Minister

by our Parliamentary Correspondent

UNDER most circumstances individuals would have access to computer information stored on them, but there would have to be exceptions in the interests of national security. Confirming the thrust of the government's White Paper on data protection legislation, Minister of State at the Home Office Timothy Raison said in the Commons that the proposal to set up a new registration authority would go a long way towards allaying public anxiety.

Raison emphasised that the job of the Registrar would be wholly independent of the government. He would report annually to Parliament, and would be able to register the details of all users of computerised personal data and the purposes for which that data was held.

On occasions, he might need to make further inquiries of the data user, and he would be able to investigate complaints. He would be given power to require a data user to modify his system, for example, if inadequate security ar-

RAISON . . . *Allaying public anxiety*

rangements had been brought to his attention or if the user was disclosing information in a way incompatible with the registered purpose.

There would have to be sanctions to ensure that these objectives were met, said the Minister.

According to the White Paper, criminal and civil sanctions will be tailored to fit the general principles of the data protection scheme and will complement the powers given to the Registrar.

It will be made an offence to make a false statement to the Registrar and to process personal information automatically without being registered or exempted from registration.

It will also be an offence to fail to comply with a notice served by the Registrar about a defect to be remedied.

Most of the general principles will attract civil rather than criminal action but the government is to consider whether some provision should also be made in the legislation for criminal sanctions where a data user deliberately records, uses or disseminates false information, refuses access to a data subject without good cause, or uses information for a purpose which is not registered.

The government would not be proposing statutory codes of practice in every sector, basically because Ministers did not believe it possible to provide from the centre for the variety of systems that codes of practice would have to cover to be meaningful.

Raison said the government envisaged that certain individual sectors would draw up their own codes, in consultation with the Registrar.

The government recognised that particularly sensitive areas included data revealing racial origin, political opinion or religious or other beliefs, health or sexual life and criminal convictions.

Certain sorts of data must be kept confidential in the interests of national security. The government proposed to take account of them by appropriate exemptions.

Raison's outline of the White Paper was delivered in an answer to questions raised by Geoffrey Dickens, MP, about overseas contracts being lost because insufficient care was paid to data protection.

It was claimed that foreign competitors were raiding British computers, discovering a quotation that was being proposed and being able to undercut it.

Raison replied that the security of a private sector computer holding commercial data was primarily a matter for the company concerned and not the government.

GERMON . . . *Everyone will have an information machine to operate.*

Peachtree at double

by Maggie McLening

ENTHUSIASTIC response to its software advertising has led Peachtree, now part of Management Science America, to double its number of UK dealers.

The newly-established UK branch of Peachtree had announced its intention to appoint 35 dealers. But, according Peachtree's dealer sales manager Robert Fisher, it received so many applications that the company has ended up with 60. Although some will be aiming at vertical markets, the majority will sell business applications.

A factor which went in the company's favour was IBM's decision to adopt its ledger packages for the IBM Personal Computer. But Fisher is reluctant to give too much credit for the dealers' response to IBM's endorsement of its products.

"Perhaps people may have heard the name Peachtree because of that, but I don't think it has influenced them that much. Certainly IBM entering the micro market has given it more credibility," he conceded.

Sales worth £650,000 are predicted by Peachtree for the first year of operation in the UK, and it intends to expand marketing into Europe before the end of the year.

More CAFS on way

by Andrew Thomas

IN what it claims is a significant advance towards fifth generation technology, ICL has announced its plans for the future of its content addressable filestore, CAFS. Two new CAFS products are on the way, the CAFS-ISP information search processor, due in mid-1983, and the CAFS-IS information server, to follow a year later.

Whereas the older CAFS 800, which remains in production, occupied two complete equipment bays, CAFS-ISP comprises a single platter which can be added, either as original equipment or as a field upgrade, to a standard DCU2 device control unit on any of ICL's 2966-type mainframes, the 2958, 2966, and 2988, running under VME 2900.

CAFS-ISP offers content addressing on EDS80 exchangeable discs, and the FDS 160 and FDS 640 fixed discs. The availability of the 640 Mbyte drive puts the maximum online storage available to CAFS-ISP in excess of 80 gigabytes. No special formatting is required.

"Rather than bringing all the control logic to CAFS, as we did with CAFS 800," says John Collins, marketing manager for CAFS, "we took CAFS to the controllers. Its performance is potentially significantly greater than CAFS 800."

CAFS-ISP will be priced at around £50,000, a significant reduction from the £170,000 of the CAFS 800. The first order for the new product comes from South Africa, in the form of the Southern Life Association.

Racal in network bid

by Donald Kennett

RACAL-MILGO has formally launched Planet, its bid for the UK local area network market. Capable of supporting up to 500 terminals and processor based resources, the network takes the form of a double ring of coaxial cable which operates at 10 Mbits per second, access to which is controlled by a token passing mechanism.

It is designed to solve the problem of overcrowded cable ducts where many terminals and peripherals are individually connected to distributed minicomputers.

The ring provides standard V24 connections for devices transmitting at up to 19,200 bits per second synchronously or asynchronously.

A starter pack costing about £5,000 enables users to get going with six attached devices. The most expensive part of the system is the ring director. This stores the physical addresses and performance details of the devices attached and sets up virtual circuits between them. It also checks users' passwords and monitoring errors.

In the future it may be used to provide standard higher level networking protocols such as file transfer, transport service and public packet network access.

Cost of the director is shared between the attached devices, so that a typical network with about 40 attachments would cost £500 per device. Product manager Bob Gernon says Racal is anticipating the day when every person in an office has an information machine to operate.

Software house finds 17 'Personal' bugs at IBM

by Howard Karten

BUGS in the systems software for the IBM Personal Computer have been found by a US software house, and one of them could be serious.

Seventeen bugs have been discovered by or reported to IBM, says David Walonick, who runs a small company in Minnesota which sells statistical packages.

The most significant problem comes when displaying results of some single and double precision calculations performed in Basic, Walonick says. He discovered the bug when converting statistical software he sells from a Tandy TRS80 to the IBM unit.

But Microcomputerland, which has been selling the IBM Personal Computer in the UK prior to its official release here, has found no major problems with the 100 or so units it has put in the field.

Walonick believes that the problem lies in the code written into ROM (read only memory). He has verified, on three separate units, that Basic code to divide .1 by 10 results in an answer of .001, out by a factor of 10. Other errors in displaying answers may also exist, he says. Eventually, according to Walonick, IBM may well have to recall all units to replace current ROM.

According to an IBM spokesman in Florida, there is a bug in the Personal Computer involving the display of double precision numeric results. IBM has announced a method of displaying those results that solves the problem, he says, and will not be issuing new chips. The spokesperson said IBM also had a well-defined method of answering customer questions or problems, which involved an IBM dealer response centre.

The IBM Personal Computer is now also available in the UK "off-the-shelf" from KGB Micros, the Slough-based systems house. KGB sells it for £2,950, which includes the operating system, MSDOS, and a Shopping Information Service (SIS). That matches the price of Microcomputerland.

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Britain will keep a low profile at Hanover Fair

by Kevin Cahill

WHILE next week's exhibition in Hanover is called the fair of fairs, the British representation will account for just 5% of the 2,200 computer companies on show.

But added to the UK contingent of 102 companies at Hanover will be a number of American and other companies which have bases in Britain.

One such company, Digital Equipment, will be displaying the latest addition to its Vax range for the first time in Europe. This is the 11/730, referred to by DEC president Ken Olsen when he spoke to financial analysts in New York recently.

The machine is smaller and cheaper than the upper end of DEC's most successful range of 32-bit minicomputers and is thought to be priced at under $55,000.

DEC will be exhibiting in conjunction with a group of eight OEM dealers who will demonstrate their software on the stand.

Although predominantly German, despite strenuous efforts by the organisers to make the show fully international, Hanover has attracted a substantial Japanese showing.

Hitachi is expected to show its new mid-range additions to the M-series of mainframes, currently sold in Europe by BASF, Olivetti and NAS.

But the big Japanese push, developing from a base established and broadened considerably over the past two years, is expected to be at the lower end in the small business and personal micro sector.

Last year Sharp and Toshiba used Hanover Fair to show a series of small computers which had not previously been seen outside Tokyo. This year, with a substantial over-capacity developing in the home micro market, well known companies like NEC are expected to be joined by others such as Logic Systems International, AI Systems and Sord.

The Japanese are now a major presence at Hanover at every level.

One of the British companies which will exhibit under the Beta banner (British Equipment Trade Association) is Micro Focus, supplier of CIS Cobol. Allan Harris, from Micro Focus marketing communications, says that Hanover is the company's big chance to introduce its products to the German market.

Micro Focus will be using Hanover to launch the company's Cobol Animator on the European market.

ACT Microsoft splits up with VisiCorp to handle rival packages

by Robert Parry

ACT Microsoft has severed links with VisiCorp, previously Personal Software, developer of the hugely successful VisiCalc financial modelling package for micros.

The Birmingham-based microcomputer software house was the UK distributor of VisiCalc and other programs from the US company which include VisiPlot, VisiTrend and VisiFile.

VisiCorp was dropped because of the wish to handle competing packages for financial planning, says ACT group managing director Roger Foster. He feels that VisiCorp rather sat on its success with VisiCalc, and did not upgrade it to keep up with competing packages which have come in its wake.

ACT Microsoft will now handle SuperCalc, which has similar features to VisiCalc but is better, acording to Foster, and MultiPlan – "frankly an incredible program" he says. SuperCalc was written by US company Sorcim and MultiPlan by Microsoft. Both are available on the Sirius 1 16-bit micro distributed by ACT.

"VisiCalc is no different now from what it was in the beginning," comments Foster. "I don't think they have moved with the times."

Even so, VisiCalc was a good seller for ACT Microsoft, which shipped 500 to 600 copies a month, Foster estimated, though the margins on it were "not very desirable". The other products in the Visi family do not sell particularly well.

"We failed to shift any of them in any volume over the last year," says Foster.

ACT's "gentlemen's agreement" with VisiCorp to cease distributing the products took effect from April 2. Foster thinks that another distributor will be appointed to handle the Visi products, rather than VisiCorp selling directly to dealers.

Last year VisiCalc featured in a software copyright action, in which ACT was concerned that it should be seen to be protecting the US owners so that they would not "melt away into the night".

Jacquard users' direct line to new US owners

by David Craver

THE air is clearing for Jacquard's UK user community. New owners of Jacquard, Applied Technology Ventures of California, has confirmed that distributors will market the Jacquard products in the UK, with a direct line to the US company.

New product releases, frozen since troubled AM International announced last November its intention to sell Jacquard, have now been put in the pipeline. Deliveries of a new J100 word processor with extended memory and a faster processor will be in June, and ATV says it will make a major commitment to office automation.

ATV signed the deal with AM International for Jacquard late last month. AM will continue to manufacture Jacquard systems for six months, with a renewal option.

Gordon Skinner, managing director of MBS Data Systems, the largest Jacquard distributor in the UK, said he "always had strong faith in the products". But AM International "never proved themselves from a management standpoint."

MBS will be available to provide service for Jacquard users who bought systems from Jacquard UK, which folded last month. Five service engineers from Jacquard have joined MBS, with the others going to AM Variotyper, which will take over support and service for Jacquard UK users.

Skinner is bullish about prospects for Jacquard equipment, and said he hopes to expand his user base from some 200 systems to 250 or 300 systems this year.

The total UK base is estimated at 500. About 100 of those were sold by Jacquard UK.

● AM International has defaulted on a $115 million short term debt with US lenders. The company reported a nearly $18 million loss in the second quarter ended January 30, and a loss of $245 million for the year ended July 31, 1981.

Honeywell UK debut in office automation

by David Craver

HONEYWELL'S entry into office automation, announced last year in the US, is now ready for delivery in the UK.

The four models in the range are based on the DPS6 minicomputers, and include standalone word processors with electronic mail software, 16-station shared logic units and large networked shared text and data systems. Viewdata will be available in August.

Sales of the Office Automation System, OAS, will be made both directly by Honeywell and the UK systems houses which sell the DPS6. MBS Rentals of Eton says it has signed the first UK contract for the standalone units and has two users running a mix of word and data processing.

Honeywell has signed up its first UK customers. They are Thorn EMI, Reed Stenhouse in Scotland, and the Woodspring District Council in the West country.

The single station Infowriter costs some £6,500 with software, and includes 128 Kbytes of memory, 650 Kbyte twin floppy discs, and printer. A four-screen system with two printers and 10 Mbytes of disc costs about £26,000.

Honeywell expects to sell most of the systems to its large and medium-size users. One of the offerings, OAS-F is system software to allow remote DPS6 processors, with all the office automation functions to be fitted into a network around DPS7 or DPS8 mainframes.

Online grant

GOVERNMENT support of £37,200 is to be provided for the Online Information Centre set up in 1979 to promote effective use of online data services. The grant, which comes from the Department of Industry and British Library, is conditional on the centre generating £17,000 from subscriptions to the newsletter and other fees.

Dealer network

PRIOR to the UK launch of the Enterprise desk-top micro, Data General has signed up Coln Electronic Systems as its second stock-holding distributor. Coln managing director, Jeff Lea, ex-Northern European marketing manager for Intel, will establish a dealer network in the southern half of the UK.

Distributor to launch 'own brand' terminals

by Kevan Pearson

GEVEKE Electronics, the Amsterdam computer peripherals distributor, has announced a major change in its business policy with the launch of it own range of computer terminals.

Until now the company has acted as European distributor for US-built terminals and peripherals. But with the Visa range, announced last week, the company is starting to compete as a manufacturer in its own right while retaining its distributor status for companies like Digital Equipment, Hazeltine, and Diablo.

The move was prompted, says group managing director Ton Risseeuw, by the US manufacturers switching their production to the Far East. This increased the cost of making terminals available to Europe, so Geveke decided to manufacture its own terminals in the Far East, cutting out the US connection.

Risseeuw was also critical of the Americans' response to European needs in terminal design. He said the Visa was designed especially for the European market.

The Visa family comprises two models initially, the 35 and 40. The model 40, available in May, is a full function, mid-range terminal with microprocessor controlled display and keyboard. It will cost £650 for a single terminal or $795 each for OEM quantities of 100, says John Robertson, Geveke's UK sales manager.

The 35, available by July or August, is a dumb terminal with a microprocessor driven screen. It will cost £495 for single shipments or $605 each of over 100 machines.

Geveke expects m get 10% of the European market in the first 12 months of sales of the Visa 35 and 40, says Risseeuw, and it intends to extend the series upwards into the intelligent terminal range.

There are no firm plans to extend their "own brand" policy to other types of peripherals at the moment, but the company is considering moves in that direction, Risseeuw added.

Geveke is a well-established peripherals supplier with sales of over $50 million in 1980. It sells about 10,000 terminals a year, and has an annual growth rate (turnover) of 25% a year, Risseeuw says.

GOULD . . . "Residual vale of the systems will improve".

Used 2903 market picks up

by Andrew Thomas

ALTHOUGH out of production for several years, the market for used ICL 2903 and 2904 mainframes is picking up, says John Gould, engineering director of third party maintenance company Mills Associates. According to Gould, the main reason is the availability of third party maintenance.

The Monmouth-based company has been providing engineering support for users of ICL's old 1900 series machines since 1978, and has branched out into the 2903/4 area, claiming to be the only third party organisation to have done so.

"We are not under pressure to sell a new product," says Gould, "We assess maintenance contracts solely on the technical performance of the equipment. As the second-hand market in these machines develops, the residual values of the systems will improve."

"People are looking to make their existing hardware last longer," says Roger Whitehouse, service manager at Mills. "The financial situation means that a lot of firms cannot afford the move to new kit."

Mills has about 400 customers throughout the UK, who prefer a third party maintenance company to ICL's own engineers for a variety of reasons including cost, typically 15%-20% less than ICL says Whitehouse, and assurances on maintenance for old hardware.

"Some customers have asked us for five-year guarantees on cover for 1900s," says Whitehouse.

"ICL's maintenance policy is aimed at future hardware sales," he adds. "Users often have to pay extra for cover on old kit that ICL would rather replace than maintain."

SALES BRIEF

SPL gets the message from Swiss

SPL INTERNATIONAL has won an export contract to supply a £600,000 message switch and test key authentication system to the Swiss Bank Corporation, with four further systems to follow. The first system to be installed in Basel this summer will run customised ADS 365 message switching software from SPL on Tandem NonStop processors.

The systems will be decentralised, with several SBC branches connected to each, and will be networked through leased telegraphic links initially, moving later to X25 links.

SPL has installed a similar system for Svenska Handelsbank in Stockholm.

IT Centres deal

BTG-backed viewdata system manufacturer Technalogics Computing of Liverpool has been awarded a contract worth over £500,000 to supply microcomputer based viewdata editing systems to the Department of Industry's 100 Information Technology Education Centres this year.

Export success

OXFORD Automation, the recently re-named subsidiary of Oxford Instruments, has won its biggest export order through its South African agent Alpret for an energy management system with 3,000 sensor and plant control inputs for the Iscor steel producing group. Worth more than £250,000, the system will include 39 microprocessor-based remote units which communicate at 200,000 bits per second over twisted pair cables to a central dual-processor Oxford System 86 master station, which will be supervised by a pair of Hewlett-Packard 1000E minis.

Bass tops up

BASS, the brewing and entertainments group, is extending its computer networking operation with £150,000 of data communications equipment from Codex (UK), a Motorola subsidiary. The deal is for an intelligent matrix switching unit and a variety of modems to link 20 local Univac V77/800s to the company's two major computer centres in Glasgow and West Bromwich.

Ship-shape

BOOK composition at Lloyd's Register of Shipping in West Sussex is to be done by a CS7-15 computer system from Ferranti Computer Systems. Based on the Ferranti Argus 700G machine, the CS7 will be used for typesetting of brochures and forms as well as for books.

Good start

THE first major order for CTL's Momentum non-stop computer system has come from foam and fibre supplier British Vita. The order totals £500,000 including CTL's ICE networking environment and TAD and Reporter transaction processing aids, and other software to be accessed from 50 terminals on 20 sites. The system enables the company to add management information, order processing and stock control functions.

European robot sales set for rapid growth

by Maggie McLening

A DRAMATIC growth rate of 51.4% per annum is predicted for the robotics market in Western Europe, with total value reaching $763.2 million by 1986, according to a Creative Strategies report.*

Highest area of growth is forecast for assembly applications, with arc welding, machine tools and metal processing close behind. Spot welding has the lowest projected expansion rate on only 6%.

Analysis of orders taken in 1981 indicates that growth rates will be particularly rapid until 1983, with some manufacturers stating that over 80% of current orders are from existing customers expanding their base.

Because of the speed of growth, the report suggests that there may be a pause in the market in late 1983 while new products are absorbed and price structures adjusted, particularly to take account of Japanese developments.

One of the reasons behind the projected increase in the use of assembly robots is that they are likely to decrease substantially in price. Mechanical costs of producing them are relatively low and control systems costs can be reduced by mass production at the light-weight assembly end of the market, the study says.

* Western European Robotics, Creative Strategies, 4340 Stevens Creek Blvd., San Jose, Calif., 95129, $1.450, 155pp.

Govt to ease buying procedure

By Robert Parry

GOVERNMENT procedures for buying computer systems are to be changed following a review by the Central Computer and Telecommunications Agency. An internal working party has been set up within the CCTA to carry forward the review's recommendations.

The review team concluded that the present procurement procedures, devised when almost all projects involved medium-sized mainframes, are no longer fully satisfactory. The single framework is regarded as too inflexible, and the review proposes the introduction of six system categories to allow the time and cost of development and procurement stages to be more closely related to the value and likely risks of particular projects.

The categories suggested are: Basic systems under £90,000; simple systems under £90,000; replacement systems; turnkey systems; large systems over £90,000; and major systems.

While accepting the need to streamline the procedures, particularly for small systems, the CCTA remains unconvinced on the actual definition of the different categories. But speeding up procurement for small projects is to be made a high priority.

BARATH . . . Seeking distributors to market Elbit products.

Elbit to launch comms range for CP/M users

by Boris Sedacca

JEWISH people have always been known to be good merchants, but once they got to Israel, they forgot about it. This anecdote was used by Yossi Barath, the new managing director of Elbit, Data Systems' UK subsidiary, to explain the Israeli company's main weakness – marketing.

Barath also announced the imminent launch of new communications-oriented devices and said that his company was actively seeking distributors to market Elbit products now that it was concentrating on manufacture.

The devices allow users to communicate with machines ranging from microcomputers running the CP/M operating system to mainframes, including IBM networks.

Barath emphasised that Elbit was not trying to convince would-be distributors to sell an alternative communications strategy to IBM's but to offer a system which would help them to rationalise the number of hardware and software products within an existing IBM communications environment.

He added that Elbit had learned the hard way that it could not offer a minicomputer with its own operating system which users could not find applications for outside the company.

"Although CP/M is not a particularly good operating system, no user is scared of taking it on because there are so many applications for it. Now Digital Research has been trying to launch and relaunch the multi-user version, MP/M, with limited success.

"Our system will allow users to stay with CP/M and still communicate with each other," he said.

Water versus air-cooling still major issue for mainframes

by Boris Sedacca

HEAT dissipation is becoming a more crucial element in the calculations of big machine manufacturers. The issue is whether to blow air over the chips or to cool the air around the chips with water.

IBM's latest large mainframe announcement, the 3083 Series, brought the long-awaited move to air-cooling, but not all the way up the range to the 3081.

This represents another tactical move in IBM's H-series strategy. Users of IBM's mid-range 4300 series who were reluctant to move up to the 3033 series and water-cooling can now have the option to stay on air-cooling.

IBM is firmly securing its big machine base by providing a long-term upgrade path on machines which are no longer threatened with obsolescence.

Water-cooling is not unique to IBM – ICL used it on its now obsolete 1900 range – but has a quaint air of antiquity to it. IBM first used it back in the Sixties on the System 360 series, so when it launched what the industry regards as the precursor to the true H-series machines, the 3081 Model D, with water-cooling, this was seen as a technical compromise – a problem which IBM could not quite get the handle on.

The plug-compatible manufacturers were quick to exploit this, feeding on the widespread belief that the Japanese air-cooled technology on which their machines are based is ahead of anything IBM has to offer.

But the PCMs knew that IBM was not going to show its whole hand on the H-series. IBM threw in a Joker fairly early on in the game in the form of Extended Architecture on the 3081 K.

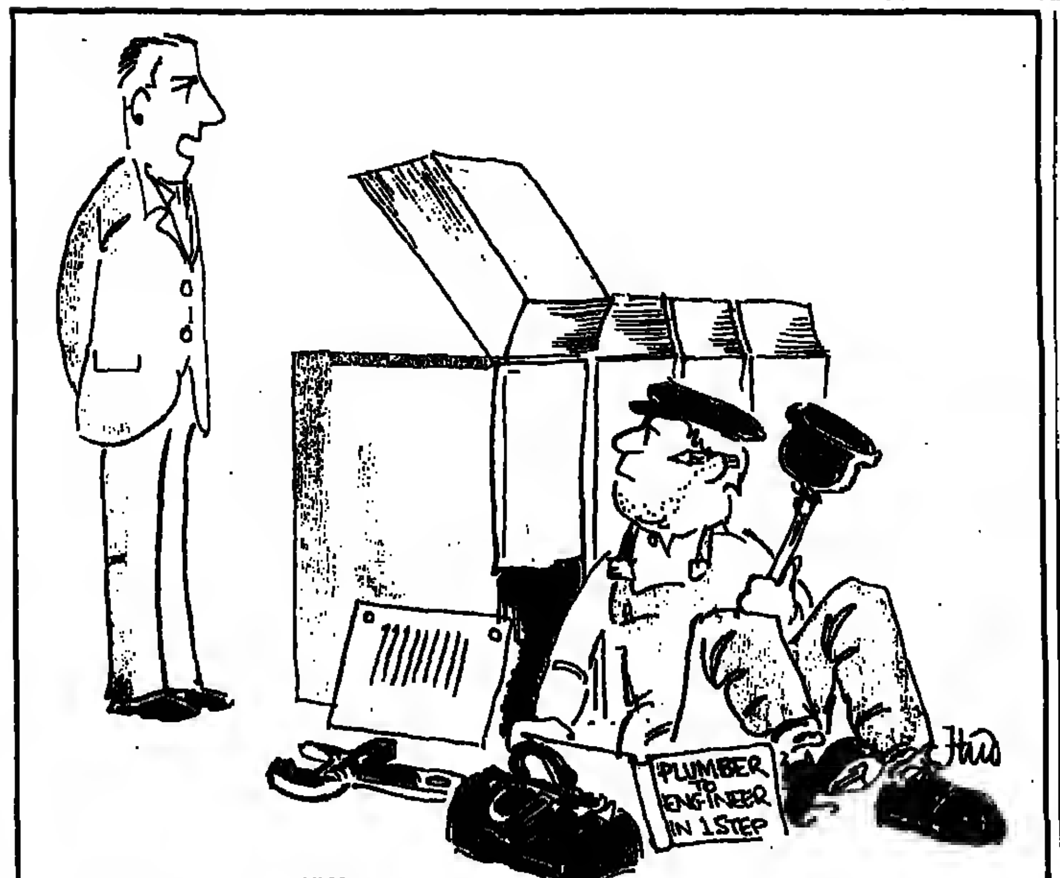
Model K provided between 30 and 40% more performance yet only dissipated 4% more heat and electric power. Furthermore, a Model D could be field upgraded to a Model K in up to 14 hours. IBM's chip packaging concept, the Thermal Conduction Module (TCM), was beginning to show dividends.

A TCM can be carried in one hand and three TCMs can make up a 370/168. The 3081 Model D and Model K each use eight TCMs but the Model K uses more of the connecting pins at the back of the TCMs. Each TCM has roughly 1800 pins. Model D uses about 1,100 pins and Model K added another 200.

If these pins were to be connected by wires, engineering changes and field upgrades would become unrealistically time-consuming and error-prone. IBM eliminated the use of cabling by using interchangeable TCM boards with 20 layers to carry the connections between TCMs, along the same lines as multi-layer printed circuit boards.

Nine TCMs will fit into one TCM board the size of a flipchart. This method also helps to automate production of the 3081 and cut down assembly time.

However, the concentration of circuitry into such small spaces creates heat dissipation problems, and the chip surface of a TCM is hotter than that of a flat-iron on a setting for "cotton", or three watts per square centimetre junction temperature where the chip connects to the substrate on the TCM.



Plumbers to get their cards at IBM sites?

Had IBM used air-cooling, it would have needed to blow 94 cubic metres of air per minute over the surface. Furthermore, the industrial sulphur dioxide content of air also presented corrosion problems for chip connections.

Instead, IBM enclosed the chip surface in a helium-filled casing over the top of which a water jacket was bolted on to remove the same amount of heat with .03 cubic metres of water per minute.

This provided a closed circuit primary cooling stage and enabled IBM to pack 704 circuits per chip (over 50% more than Amdahl), to place the chips closer together for increased processor speed, and to deliver a machine which occupies less floor space. Therefore, IBM thought it only natural that it should use water to cool water.

The result was a Coolant Distribution Unit which chilled the deionised water pumped into the processor by means of a secondary mains water supply. The CDU was described in the IBM sales manual as the 3087 Model 1, so a Model 2 using air-cooling was imminent.

In fact IBM announced it ahead of industry expectations. Most observers thought air-cooling would not come until the end of the year.

At the same time, IBM was keen to get users into the H-series, so air-cooling was only made available on the newly announced 3083 series of processors, the top-end of which (Model J) forms half of a 3081 Model K dyadic configuration.

For the time being, it looks as though users following IBM's upgrade path will eventually be forced to adopt water-cooling. IBM has made chilled water more economical than air-cooling. A 3087 Model I costs £31,790 against £40,086 for the Model 2.

BT creates a world record

by Donald Kennett

ANOTHER world record in optical fibre transmission has been set by British Telecom's Martlesham Heath research team in Suffolk. BT transmitted digital signals at 650 Mbits per second (enough to carry nearly 8,000 digitised phone calls) over a 31.5 kilometre length of cable without regenerating the signal.

The cable is installed between the Martlesham laboratory and Woodbridge System X exchange.

The latest performance levels promise significant savings which could increase the viability of the proposed national re-cabling programme.

BT went on to attach the link to another 31.5km length of cable wound around a drum in the laboratory and transmit at 140 Mbits per second over the whole 63km of unbroken cable.

This compares to repeaters at an average eight kilometres in the optical fibre links currently in service.

Harris sets its Mind on distributed processing

by Kevan Pearson

A MAJOR attack on the distributed processing market has been launched by Harris Systems with the introduction of its Mind series of intelligent terminals.

Mind, Multifunctional INtegrated Design, can support up to 60 terminals with concurrent execution of applications in the terminals. It also supports IBM's 3270 bisynchronous communications protocol and full Systems Network Architecture (SNA) operations.

The system has two processors at its centre – one for file handling resource allocation, data entry and remote job entry, while the other acts as a front end for 3270 or SNA communication with either the local terminals or the host mainframe.

Terminals for the system are Zilog Z80-based and have up to 64 Kbytes of memory, with screens ranging from 960 to 3440 characters. The system can simultaneously accommodate up to four mainframes for remote batch operation. Access and retrieval are achieved through Interactive Cobol or Harris' Remote General Application Language (Regal).

The system will be demonstrated at Hanover Fair from April 24 to 26.

Extra heat is laid on for Computastars

by Andrew Thomas

A SPARKLING response to the call for teams for this year's Computastars has resulted in over 150 entries. This is too many for the four heats originally scheduled, so we have added an extra one at Copthall Stadium in Barnet, North London on Saturday May 29.

Already almost half its 40 places are taken up by teams already booked, but the remaining places are now available for entrants anywhere in the UK.

Just complete the form on this page and return it as soon as possible to the organiser. But hurry, places are being snapped up.

Computastars is the nationwide sports competition for DP professionals, which is sponsored by Computer Weekly. A list of competing teams is shown here. The regional heats build up to national finals in Birmingham on Saturday July 24, and then go on to a European final for the winning three teams.

A quick recap of the rules and regulations for anyone careless enough to lose our February 11 issue, which listed them in full. All competitors must be fully costed to DP departments. Teams are single sex and comprise five members, one of whom is nominated as the No 1 and competes for the individual trophy in addition to being the lynch-pin of his or her team.

The other team members are selected by the captain to compete alongside the No 1 in each of eight events in the day.

There are two special team categories, one for veterans (all members over 35), and one for small units (the entering company must employ fewer than 25 eligible people within a 25-mile radius of one site).

Last year's steeplechase

At the same time comes Computug, a five man or woman tug-of-war competition. Entrants must not be competitors in the main Computastars event, however.

The European finals will be held at the Du Heysel stadium outside Brussels on October 10. This venue is the Belgian equivalent of Wembley, and is available only for international competitions, an illustration of how our Continental counterparts view the British threat.

Entry fees are £35 per team in the main competition, £10 for Computug. An extra £10 is levied should a team make it to the UK finals.

Meanwhile, it looks as if we have a winner in the silliest team name competition. The British Mail Order Corp is entering two teams for the Barnsley heat. The men's team is titled Male Disorders, which is pretty silly, but the women's team rejoices in the name Bloody-Minded Old Cronies.

It's difficult to believe that this can be beaten – but one never knows.

COMPUTASTARS ENTRY FORM

We have read and accept the conditions of entry for the Computastars/Computug 1982 and would like to enter

Main competition ..... Men's teams ..... Womens's teams
Small units ..... Meo's teams
Veterans ..... Meos' teams
Computug ..... Men's teams ..... Women's teams
Name of team(s) .....
Company .....
Address .....
.....
Name of contact .....
Telephone ..... Extension .....
Signature of DP manager or equivalent authority .....
Position held .....

BARNET HEAT ONLY

Enclosed is £..... to cover the entry fees for the team(s). Cheques should be made payable to Computastars Ltd.

In all matters relating to the rules or conditions of entry, the decision of the organisers is final.

Please send entry form and fees to Computastars 117b High Street, Croydon CR0 1QG. Telephone 01-688 6690. All enquiries to them please.

COMPUTASTARS

Sponsored by Computer Weekly

Dates and venues: Crawley, Saturday, May 15. Enfield, Sunday, May 23. Barnet, Saturday, May 29. Barnsley, Sunday, June 13. Birmingham, Saturday, June 26. UK finals: Birmingham, Saturday, July 24.

Teams taking part in the competition

THE full list of competitors as at the close of entries is as follows. Twenty more places are now available in the new Barnet heat.

Barnsley Heat – June 13

British Mail Order Corp (2 teams), British Olivetti, British Telecom, Compower, Data Logic, David Brown Gear Industries, Digital Equipment Corp (DEC) (2 teams), Heywood & Partners (3 teams), Greater Manchester PTE, National Computing Centre, Provincial Building Society, Provident Management Services (4 teams), Reckitt & Colman (2 teams), Record Ridgeway Tools, Rowntree Mackintosh (2 teams), Royal Isourance Co, Scottish Widows Fund & Life Assurance Society, United Biscuits.

Enfield Heat – May 23

Arthur Andersen & Co, BP International, British Airways, Centre-file (3 teams), Computer Machinery Company (CMC), Computer & Systems Engineering (Case) (4 teams), Data 100 (3 teams), Datalogic (2 teams), Digital Equipment Corp (DEC) (4 teams), GCS Cambridge Business Centre (2 teams), Hewlett-Packard, Honeywell Information Systems (2 teams), IH Minet & Company, London Borough of Barnet (2 teams), London Borough of Lambeth, London On-Line Local Authorities, Martin the Newsagents, Micro Scope, Pericom Data Systems, Plessey Management Services (2 teams), Provident Mutual Life Assurance (2 teams), Royal Borough of Kensington & Chelsea, Thorn EMI (4 teams), Viasak Computer Systems, P&O Computer Services (2 teams).

Crawley Heat – May 15

Bank of America (2 teams), Barclays Bank International (3 teams), British Aerospace (2 teams), Burroughs Machines, Butterworth & Co, Capsicum Computer Services, City University, Codex UK, Commercial Union Assurance (2 teams), Computer Weekly, Datasolve (formerly BOC), Credit Lyonnais, Duracell Batteries, Easams (2 teams), BPS Consultants, Hallmark Associates, Inland Revenue, Kienzle Data Systems, Legal & General Assurance Society (5 teams), Ministry of Agriculture, Fisheries & Food, National Provident Institution (3 teams), Rediffusion Simulation, Securicor, Segas, Surrey County Council (2 teams).

Barnet Heat – May 29

Armstrong World Industries, Bank of England (3 teams), BH Blackwell (3 teams), Gonzalez-Byass UK (2 teams), Grand Metropolitan Bureau Service, Linscott Computer Services Group, Logica (4 teams), Rank Xerox (2 teams), Wimpey Group Services.

Birmingham Heat – June 26

Barclays Bank, Barclaycard, BL Systems (6 teams), British Aerospace, Computer System & Products, Crendon Computing & Consultants, Data 100 Systems, Fisons, Gloucestershire County Council, Hogg Robinson Systems, Kalamazoo Systems (3 teams), Littlewoods Organisation, Midland Household Stores (3 teams), NEI-APE, Open University, Safe Computing, Sandvik, Scicon Computer Services.

Govt may absorb Transpac

TRANSPAC, the company which operates France's data packet-switching network for the French telecommunications authority, may soon be absorbed by the government under pressure from the trade unions.

Louis Mexandeau, Minister for Posts, Telecommunications and Teleditfusion, is studying a request from the unions – backed by active members of the ruling Socialist party – to abolish the separate identity of the PTT's subsidiary companies.

But many French telecom observers consider that Transpac owes much of its success to its relative independence from official interference. Transpac's equity is split between the PTT (97%) and users (3%).

Transpac is proving so successful in France that foreign customers are queueing up for the opportunity to use its technology. SESA, the prime contractor in the venture, has acquired Australia, Brazil, New Zealand and Luxembourg as clients over the past year, scooping all the big international orders for data packet-switching networks.

SESA co-operated with Britain's Logica in the European Information Network which entered service in 1976. For Transpac the French firm chose SEMS Mitra 25 minicomputers to control the network.

Transpac went into commission at the end of 1978 with four switching centres and a capacity of 1,500 subscribers. It will be able to handle 11,000 by the end of this year. The target for the close of 1983 is 15,000 subscribers.

A subsequent rate of expansion of between 4,000 and 5,000 subscribers annually is planned until 1985. Access by standard telephone line to Transpac has recently been increased from 1,300 bits/second to 1,200 bits.

DP holds the key to improving the health service . . . . . Kevin Cahill reports on a European medical conference

Databases and the Tsar's disorder . . .

HAD the revolutionary firing squad at Ekaterinberg not induced terminal bleeding in the Tsar and his family, the male line may well bsve died before its time anyway from the Romanoff's family disease – haemophilia.

This strange condition which prevents the blood from clotting after Injury is also found in less regal families outside Ruasia. North-west Germany is one area which has s large number of treatment centres, and 15 of them have got together to conduct a multicentre study for monitoring and documenting the treatment of haemophilia.

Data from the atudy was collected in a hierarchical database under the database management system IMS, and retrieved using a descriptive query language.

According to doctors presenting the details of the system at the Dublin conference of Medical Informatics Europe the DBMS proved a valuable tool in developing a therapeutic strategy for treating haemophiliacs.

The method evolved by the doctors involved the patient filling in his or her own treatment documentation form on NCR (no carbon required) paper.

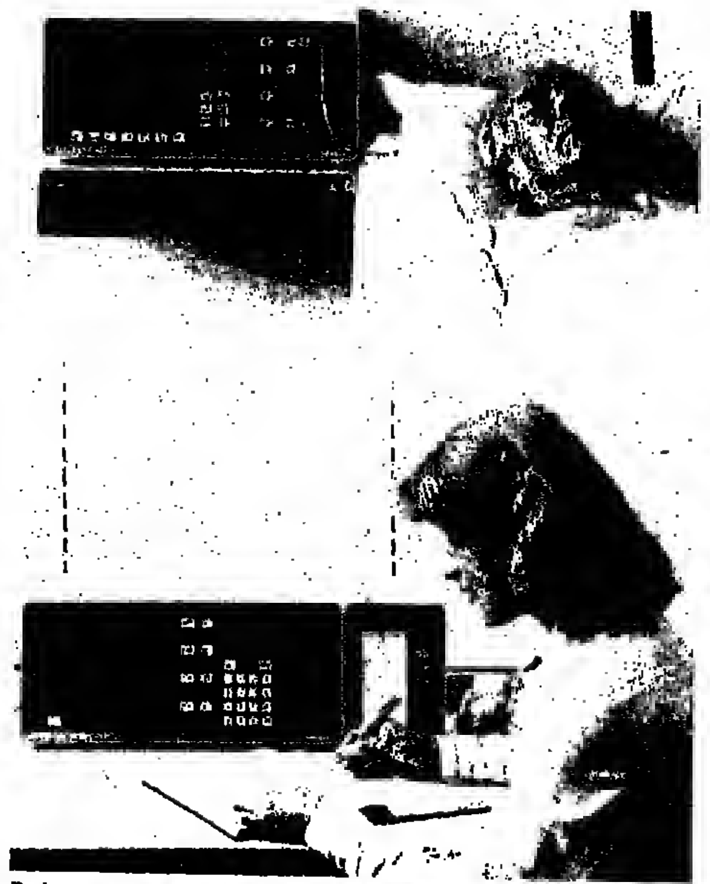
The forms, containing details of the patient's own administration of treatment, are forwarded to one of the treatment centres.

At the centre the details are entered into the computer by a data processing clerk. The first runs are for simple error checking, which test the data for plausibility.

The method of retrieving data from the North German study is on printed output in the form of quarterly and yearly treatment summaries.

The database itself is structured on four levels, in linear form, with four entities: Patient, Disease, Treatment, Outcome.

The German doctors acknowledge that using a DBMS, rather than a simple index sequential package, increases the level of initial and input complexity. On the other hand, they say that the data structure on the haemophilia study is so complex that the eventual ease of data manipulation in the database justifies the additional difficulty.



Patient monitoring is one of many medical areas being helped by computer power.

How computing has put paid to the Irish Joke

DURING the next decade, medical computing offers a key to the monitoring, evaluation and improvement of patient care and the administration and planning of the health services.

With those stirring words, the organisers of Medical Informatics Europe 82 launched the biggest gathering of medical and computer experts in Europe this year at a one-week conference which has just ended in Dublin.

The major shift of emphasis since a decade ago has been from peripheral activities such as venue planning, and hospital accounting and purchasing, to detailed patient records, structured to assist future diagnostic systems, and designed to reveal information about disease occurrence and management.

Many of the discoveries could have been made by manual means, but the use of computers has speeded up the rate at which conclusions are reached, and actions taken.

Almost every Englishman suspects the Irish are mad, and the trouble is that until the Irish got an ICL ME29 on to the job, statistics have tended to perpetutate the myth.

According to Aileen O'Hare, who presented a paper at the conference on the contribution made to health care by computerised psychiatric case registers, statistics from Irish psychiatric hospitals up to 1971 showed that Ireland had nearly double the number of psychiatratic hospital beds of, for example her nearest neighbours England and Wales.

According to the World Health Organisation's figures, Ireland had the highest number of psychiatric patients with 7.3 beds per 1,000 of the population; Finland was second with six beds per 1,000 and England and Wales was third with 4.8 beds.

All of which, once compiled, proved a vital point. Using hospital bed occupancy as a measure of mental instability in a population was invalid. Had it been otherwise, Turkey would be the most stable country in the world with about one case of psychiatric illness per 4,000 people.

O'Hara recorded how steps were taken to study the Irish situation. Three counties, each with similar populations, but with psychiatric hospitalisations which were high, medium and low, were selected.

Patients reporting to psychiatric hospitals in these areas were given a psychiatric diagnosis which was entered on special forms. The data provided by the patient, such as use of in-hospital, out-patient or hostel care, is fed forward, minus the patient's name and address, to the ME29 in Dublin.

Using Salford, Manchester, and Camberwell, London as norms, the three Irish counties showed that for every 1,000 hospital beds about 14 were occupied by psychiatric patients compared with 7.7 in Camberwell and 5.4 in Salford.

However, the analysis provided by the computer also showed that, in terms of the number of people contacting the psychiatric services, the three counties were much lower than Camberwell – 2.4 per 1,000 compared with 3.4, and were only a little higher than Salford's 2.1.

The conclusion was that whereas the numbers of hospitalised psychiatric patients are high in Ireland, this is not so for incidence of disorders. On this basis, community care programmes could plan for a predictable number of new cases occurring annually.

Which all sounds highly theoretical until you realise that hospitalisation costs the Irish over £400 a week per person, and here, with the aid of a computer's speed, was a pointer to a way to substantially reduce the number of in-hospital patients, perhaps by using more UK-style community care therapy.

GP's are looking for a system that costs no more than £7,000.

'Systems have made a GP's life more difficult'

THE general practitioner is the front line soldier of the medical profession. He or she usually makes the first contact with the enemy (disease) and is the custodian of what's left of a patient after hospital treatment.

So far, computers have done little except make a difficult life impossible, according to the majority view of those who attended a workshop on the subject, at Medical Informatics Europe.

The core of the problem was the patient record, which still seems to be presenting that insuperable dilemma of shifting definition that systems analysts of a decade ago so often had to deal with.

One doctor argued that every time he saw an analyst or a systems house, they seemed to have a complete new set of staff.

A systems analyst at the meeting claimed it was the other way around. Every time he saw a doctor even if it was at fortnightly intervals, the entire specification had changed.

During the meeting it became clear that most general practitioners wanted systems which required levels of hardware and software well into the mainframe environment. The oversell of computer capabilities, without the necessary explanation relating to cost and dimensions, appears to have been swallowed whole by many doctors.

A theme which emerged between the doctors and computer professionals who appeared to constitute about half the audience each, related to producing a simpler specification which could be implemented on existing levels of microcomputers.

The consensus was that no practice would want a system which cost much over £7,000.

Kevin Cahill profiles Gene Amdahl, the remarkable mainframe pioneer who is once again set to do battle with IBM

High stakes in game for next generation of supercomputers

A deathly 'ush 'angs on the desert air:
There is hardly a stir in the silent town as the first of the players arrives, his guns hanging loose, his billfold bulging and full.
He ignores the unfriendly stares af Ma Blue's tailored ranch hands. Genial Gene has seen it all before. He opened Blue's best acres, broke in the horses the hands still ride.
They've put it about that his luck's run out. But he opens in that twilight saloon with the air af a man possessed.
The first game busts Ma Blue's flush. With a smile as he opens again, Genial Gene declares, "Gents, it's a long night till the Fall af '84, and binary deuces are wild for this play".
He quietly slides $160 million on to the table, saying "That's just the start".

NOW this poker analogy, for the great game just beginning between the manufacturers of the next generation of supercomputers, is not as fanciful as it sounds. The prize is a slice of a market estimated to be worth $8 billion in 1985 and big machine design is not a science; it's an art form still in its early days. Too many surprises arise after a machine is assembled for it to be otherwise.

The unhesitating backers of Gene Amdahl's new company, Trilogy, have so far bet $160 million against the US and Japanese giants in the field. A bet that says the Amdahl team, father and son, are still the best artists around.

So what are they gambling on?

In the first place, Gene Amdahl the man: His training and his doctorate are in theoretical physics. He is best known among his contemporaries as "a dirty hands engineer" – a man who builds things that work. Professor Frank Sumner, the professor of microelectronics at Manchester University, where the concept of virtual memory originated says that Gene Amdahl is unequalled in the world for squeezing speed out of electronics circuits.

Amdahl built a computer, the WISC, for his thesis at the University of Wisconsin. Eventually he joined IBM where he led the team which designed the most extensively used and successful general purpose computer of all time, the 360. The machine was the source of the bulk of IBM's profits through the Sixties and into the Seventies.

It was widely imitated, first by the Russians, in part by the Japanese and had to be emulated by everyone – at least everyone who wanted to be in the IBM-compatible market.

But dissatisfied with IBM and deeply concerned at the stranglehold that the company had on the evolution of computer architecture as a result of its 70% to 80% share of the worldwide computer marketplace, Gene Amdahl set up Amdahl Corporation in 1970, with the aim of developing an alternative computer architecture to IBM's but one which would conform to the IBM operating systems:

Dr Amdahl went for the ultra-high performance end of the mainframe computer business, in effect IBM's jugular vein.

And he may have been far more effective currently than he thinks he was.

It is a marketplace which still has a degree of growth worldwide – though not much: IBM has been either stagnant, or has actually lost market share.

Where IBM has lost at the top end, it has lost to three specific companies: Amdahl Corporation, Fujitsu and Hitachi.

In effect it has lost to one man, Gene Amdahal, and to his vision of an independent architecture.

The paths of Fujitsu and Hitachi are now diverging, the two companies having combined about seven years ago to develop a single IBM compatible range of computers. Each of the companies developed and built its own machine from the range, but the design was a singular one.

One of the key influences on that design was Fujitsu's Dr Icheda, and one of the key influences on Icheda was Gene Amdahl:

Fujitau, following the death of Icheda, bought into Amdahl Corporation, and currently it builds the Fujitsu M380 super mainframe using chip technology bought under licence from Amdahl Corporation.

When it was pointed out to Fujitsu officials recently that the two machines, the Amdahl 580 and the Fujitsu 380, looked very alike in structure as well as fundamental VLSI technology, the Fujitsu staff replied that they were brother machines.

In fact, the Japanese machine uses 13 horizontal multiple chip carriers to form its processing "heart" in the CPU stack, whereas the Amdahl 580, has space for 11 MCCs but is commonly implemented using only nine.

Amdahl Corporation is now fond of putting it about that Gene Amdahl's function for most of the years he was there was as a fund-raiser, but Amdahl himself says the initial specifications for the 580 were prepared under his direction.

And during the course of the Corporation's development of the 580, not only did the Amdahl engineers lose nearly a year on the development programme, but they had to bring Gene Amdahl back to attend to a machine which had 39 multiple chip carriers in its CPU stack, compared with the nine it now has.

The rift between Gene Amdahl and the corporation he founded was less about money than about the limitations imposed on the computer world by IBM's continuing dictation of mainframe architecture.

Amdahl launched his corporation to give the world an alternative design path. But as the financing needs of development grew, Gene Amdahl's own control over the company diminished in the wake of stock sales to raise cash. With control went a vital say in where and how the new computers should be designed and built.

Amdahl seems to have believed that the corporation should have retained full control of its own manufacture as well as design.

Moving from the recent past to the present, the Trilogy team now has the world's top computer designers with universal experience of machine design on board.

What kind of machine are these people likely to produce? According to Gene Amdahl it will be a water cooled quadruple processor, running at twice the instruction speed of any machine currently proposed for delivery in 1984 or 1985.

American experts suggest that this means a machine with a minimum rating of 45 to 50 million instructions per second.

The Trilogy computer will be a mixed processor, with data flow and vector capabilities, to meet the mixed data processing needs of big corporations, according to Gene Amdahl, and he says that for Fortran code generation the machine will approach the speed of the Cray.

The machine, is to be based on a completely new VLSI chip technology, and built using newly prepared computer aided design and computer aided manufacturing techniques. It will run IBM's machine operating system directly, though Dr Amdahl says he may make modifications to the compiler.

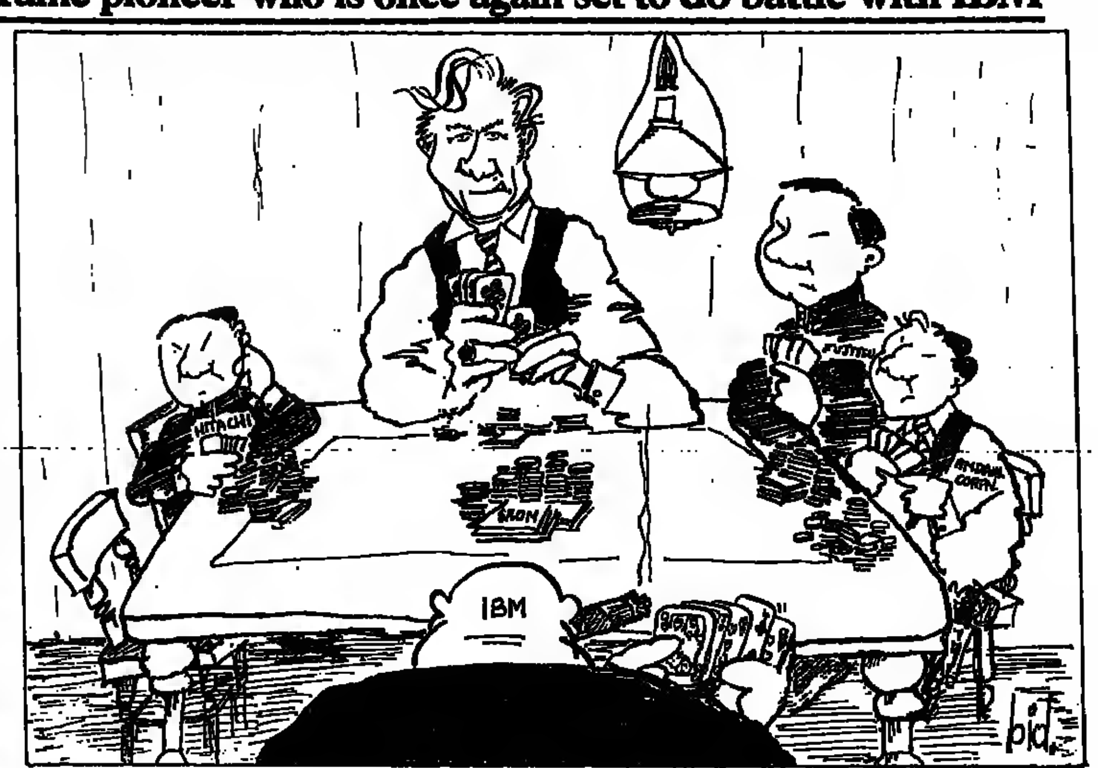
The Trilogy team is concentrating on the design and manufacture of the logic circuit chips, the devices used to construct the primary functions in the central processing unit, and he expects to buy in memory chips from whoever is making the fastest at the time.

Trilogy has a cross licensing agreement with CII-Honeywell Bull, which put up $8 million of the Trilogy funds, to share the new VLSI technology and, according to Professor Sumner, this is the area in which Dr Amdahl is at his best. Fujitsu uses the unique logic chips designed by Gene Amdahl's team at Amdahl Corp, to drive its current high performance mainframes.

Asked what kind of logic circuits he would use, Dr Amdahl suggested they would be MOS (bipolar is also mentioned in the prospectus) at about 5,000 gates per chip.

He discounted the idea that fast 10,000-gate arrays would be in regular production by 1984/85, and said that where companies were making forecasts like that they would generally be found to have gone for density at the expense of speed.

He said that the semiconductor plant Trilogy was building to produce the chips for its new computer would be the most advanced semiconductor plant in the world.



"That's just the start," says Genial Gene, as he slides $160 million on to the table.

SOFTWARE FILE — by Maggie McLening

A computer's evidence still doesn't pass the crucial test

DATA protection laws, whether to prevent software piracy or preserve confidentiality, tend to stir public opinion and receive the lion's share of the limelight.

A less well-publicised relation between software and the law might have equally far-reaching effects on software developers: the admissibility of computer output as evidence in civil and criminal law cases.

Under criminal law, for written information to be admissible hearsay evidence it must have been supplied by a person. Reports automatically generated by a computer, such as analyses of figures or checklists of reference numbers, are not permissible. This loophole in the law was discovered as early as 1965, but only a stop-gap Act was passed to close it pending the report of the Criminal Law Revision Committee on Evidence.

Even when this was published in 1972, no government action was taken. Ministers preferred to wait for the Report of the Royal Commission on Criminal Procedure,

SIZER . . . "A lot can be achieved by the computer profession working to standards."

which appeared in January 1981.

But there are cases begging the question. One currently concerns a security guard at Northwick Park Hospital who is accused of damaging a system by playing with a terminal. Only computer evidence which reveals the configuration of the system can show whether or not he was responsible.

Inspired by a court case in 1980 which acquitted Stuart Pettigrew of burglary because the proof of his guilt rested on a Bank of England computer listing of banknote serial numbers, the British Computer Society established a committee on computer evidence.

Led by Richard Sizer, a chartered engineer and fellow of the BCS, and Alistair Kelman, a barrister-at-law, the committee examined the problems associated with computer evidence in court and also the wider issues of reliability and accuracy. A report was produced and sent to the Home Office in May 1981, where the response was that the government considered there was no need for a change in the law.

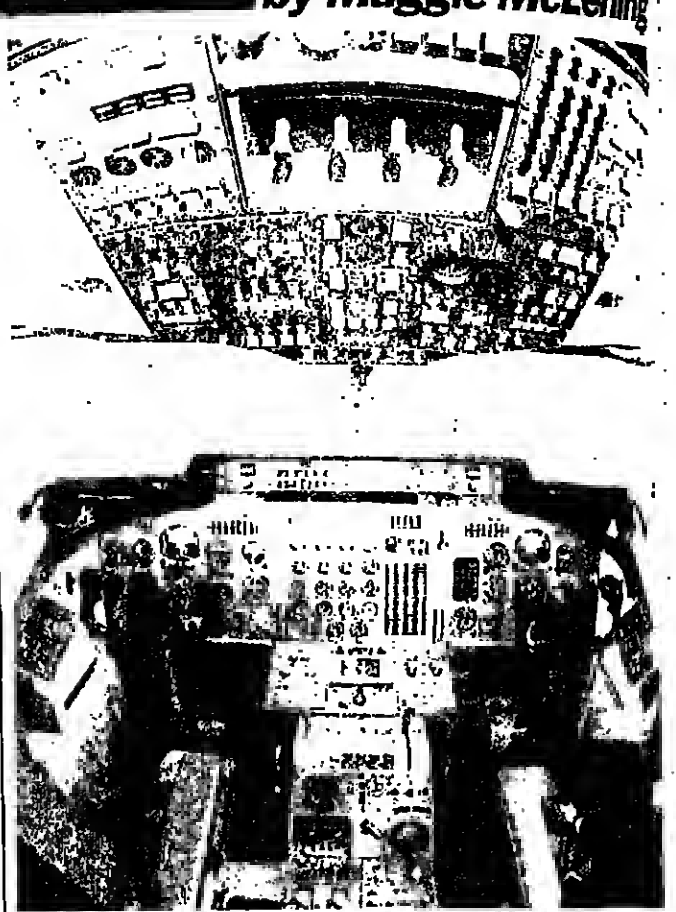
It conceded that it would be desirable to extend the scope of the Criminal Evidence Act 1965 to include computer output, but the "threshold" of the liability at which it could be admitted would have to be defined, a task which the BCS and the authors of the report have undertaken.

If the law is changed to allow computer produced evidence, the question of accuracy of systems becomes crucial. Expert witnesses can be called to testify on reliability or to describe the way a program works, but there are always unpredictable factors.

In the absence of absolute proof that a program works, a guarantee that it has been written to recognised standards is essential.

"We have tried to show in the report that a lot can be achieved just by the computing profession working to standards laid down by such bodies as the Institute of Internal Auditors and the NCC," commented Sizer.

He recommends anyone buying software to ask questions about the set of standards it has been written to, and he would like to see some form of written guarantee issued by software houses for their products.



Cockpit of the British Aerospace 146 commuter jet, in which the monitoring system is to be installed.

In-flight monitor helps aircraft tests

INSTANT information for engineers during aircraft test flights can be provided by real time monitoring software produced by systems house Millennium Professional and Technical Services.

It has been developed on behalf of Newport Instruments, whose standard industrial System 86 multi-microprocessor data monitoring and control hardware is being used.

Currently in service during the flying trials of the new British Aerospace 146 commuter jet, the system will provide the sort of information which would normally only be available after the aircraft had landed.

"This is important because the pilot knows on the spot whether the correct routines have been carried out, for example whether he has tested the plane up to the right 'g' force, and can repeat the trial if necessary," explained Dave Pearce, managing director of Millennium.

Parameters monitored on the aircraft include control surface angles, altitude, airspeed and gravity, and the calibration database is input via a TU58 cassette tape reader. Flight test data is then displayed on a Tektronix 4025 graphics VDU.

Application software is designed to take data from out-stations, calibrate it and, if necessary, compute new parameters. Results can then be displayed either in tabular form, or plotted as an "x/y" graph or shown in a time history form with the four separate parameters plotted against time.

The system, which cost over £11,000 to develop, is the first Millennium has produced for an aircraft application although it has always specialised in real time applications. Pearce considers that it could be used for other applications involving monitoring, though BAe will probably try to market it to other aircraft manufacturers.

"The system is very flexible and easily configurable," he said. "It could easily be adapted for applications in, say, the chemical industry."

Wider scope for Comet

ELECTRONIC mail system Comet is now to be available for IBM computers from its developers BL Systems.

Previously implemented only on DEC PDP-11 equipment, Comet will now run on IBM 360, 370, 303X and 4300 systems and on plug compatible machines such as Amdahl, NAS and Magnuson, running under the MVS, SVS, VM, OS MFT and MVT operating systems. Access to Comet is provided under BTAM, VTAM and TCAM access methods supporting TTY, Ascii 2741 and 3270 protocols.

A software licence for IBM versions of Comet costs £27,500 including user training.

Datalog goes West

SOFTWARE house Datalog Management Systems has launched into the US market with its online program development tool DPS.

A dealer network has been set up in the US and a marketing campaign mounted to coincide with the CUBE Spring Conference in San Diego. David Wild, managing director of Datalog, also has plans to sell DPS in Australasia.

English Logo

AN English version of teaching language Logo is to be available from UK dealers for the Apple II personal computer in June.

Developed by Logo Computer Systems Inc (LCSI) of Quebec, Apple Logo is a procedure-structured high-level language which allows users to extend built-in operations by defining and saving new commands.

Payroll for DRS20

CROYDON systems house Fernhart has announced an integrated payroll, purchase ledger and costing system for the ICL DRS20 microcomputer. Under the Trader Point agreement, Fernhart was commissioned to develop the system for ICL, although it will run on any micro which supports CIS Cobol.

Subset version

THE gap in the market for [illegible] compilers may be bridged by a subset version announced by Digital Devices, European distributor for Supersoft in the US.

Developed by software house Supersoft, for any CP/M based machine, the compiler [illegible] £185 from Tunbridge Wells-based Digital Devices.

MICRO NEWS — by Robert Parry

Education market is Lucas' aim

BROADENING its range of Nascom systems, Lucas Logic is moving into educational fields with a boxed system called Micro-Ed. This joins its other recent box level offering which uses the Nascom 2 board level product.

The new Z80A-based microcomputer system has 8K of user RAM and is intended to be run as a standalone unit with cassette tape or as part of a network, Nas Net. On the network, which is working but not yet officially released — mainly because of incomplete documentation, said product manager Mike Ayres — Micro-Ed will appear to the user to be running under a disc operating system.

The network will centre around a Nascom 3 with floppy or hard discs, Ayres added.

On the software front Lucas is trying to compile a list of educational programs written by existing Nascom users to capitalise on the several hundred Nascom 2s already in use in schools. It is also writing software in-house, said Ayres, and commissioning

AYRES . . . "We intend to become a major supplier to this market."

programs for educational users.

Among the programs under development is a financial modelling package to allow sixth-formers to play "what if?" business games.

With a basic price of £399 and a range of discounts for quantity purchases by education authorities, Lucas is clearly trying for a good slice of the educational computer market. "It is our intention to become a major supplier to this market," said Ayres, "and we are dedicating people and finance to serve it, and other public sector markets."

US firms fight Japanese with shared resources venture

SHARED resources are taking on a new meaning for US chip makers. Faced with rocketing development costs for new chips, the most obvious way to get more for each research dollar is to share research costs in the way the Japanese do.

The latest move is the plan by two industry pioneers to raise $50 million to set up a company that will help the US industry compete more effectively against Japan. Pierre Lamond, former technical director at National Semiconductor, and L. J. Sevin, founder and ex-chief executive of Mostek, are behind the new venture, Megaram, which will serve as a commercial research laboratory.

Rather than manufacture chips for itself, the company plans to develop designs and technologies and license them to US manufacturers. In four or five years, Megaram hopes to develop the technology to manufacture megabit RAMs — the next stage on from the 256K chips which are being sampled now — for which Sevin and Lamond believe funding, manpower, and the range of technologies needed are beyond single companies.

The money for the company will come from private investors, not from industry participants. It will remain independent to "take advantage of the entrepreneurial spirit" in the US, says Sevin. Independence of the semiconductor manufacturers will also make it less likely to run into anti-trust problems.

•

Interest is already being shown in the project despite many unsettled details of organisation and operation. Chief executives of 20 leading semiconductor firms have been approached, and it looks likely that Megaram will sign up a dozen in the next few months.

Eventually, it plans to hire about 50 scientists for various research projects including advanced lithography and processing technologies.

Semiconductor manufacturers recognise the need to cut R&D costs if possible. The Semiconductor Industry Association (SIA) recently set up a research co-operative to fund basic research at US universities, and expects 20 companies to contribute a total of $5 million in its first year.

Computer and semiconductor companies are also talking with Control Data about forming a research co-operative.

All is not rosy though, even with the example of what such co-operation can achieve, as is shown by the Japanese 256K dynamic RAM project run by the Ministry of International Trade and Industry. There are fears that shared research would remove technological advantages particular companies might have, or pull top-class research workers out of the customer companies.

Intel's chairman and chief executive Gordon Moore, while supporting initiatives like the SIA's basic research activities at universities, is concerned about losing the technology leadership Intel has played on in the past. He sees Megaram as a creative approach to eliminating duplicated effort, but recognises some acceptance problems.

"Our industry is so competitive, it's hard to envisage companies sitting down and talking together," he said.

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One area where companies do develop devices in close co-operation is where they have obvious mutual interests through second-source agreements. Recent developments of the 68000 microprocessor range are a good example of such links, involving the chip's parent Motorola and second-source companies Mostek and Signetics.

The feeling is that if research collaboration among the manufacturers is to take off, it will be something like Megaram that does it, and that Lamond and Sevin have the talent and connections to make it work.

Intel error detector

PLUG-IN error correction and detection for Multibus memory boards is offered by Intel's iSBC 305 and 306 Multimodule boards. By adding the appropriate module, the mean time between failure of 128K or 256K RAM boards can be increased by a factor of 20, Intel claims.

The boards use an 8206 error detection and correction unit, with 64K RAMs to store the error correcting code check bits. Single bit errors can be corrected and double bit errors detected in data read from the host RAM board, and status information provided to the system CPU board.

An error status register allows identification of which RAM chip caused a single bit error, and to recognise when a double bit error has arisen. A programmable option provides for the iSBC 305/306 module to interrupt the CPU on single or double bit errors, to allow logging of the error, or on double bit errors only.

In the second mode the single board computer ignores corrected single bit errors, and is only interrupted when an uncorrectable double bit error is detected.

With the plug-on module, OEMs can build systems using just the RAM boards, but later upgrade with error correcting capability while retaining the original memory boards if particular applications or customers require.

MICRO BRIEF

68000 SBC for Multibus

A MULTIBUS compatible 68000 single board computer, OB68K1, has been released by Measurement Systems of Newbury. The board supports 64K of EPROM and up to 128K of RAM, and can run as a standalone system or as part of a multiple processor system accessing common memory and I/O. A Unix-type operating system will be offered. Prices start from £1,000.

Name change

NEWPORT Instruments, manufacturer of the multi-microprocessor control and monitoring range System 86, has been renamed Oxford Automation by its parent Oxford Instruments Group. Barrie Marson, group managing director, has become Oxford Automation's managing director.

Apple dealer

COMPUTER equipment and system supply and rental company, Hamilton, has been appointed as an Apple dealer.

Key speakers at the First Time Financing Conference (left to right): Sir Frederick Wood, chairman of the British Technology Group; Frank Sumner, professor of computer sciences at Manchester University; John Robertshaw, director of United Computer and Technology Trust; Ron Weedon, managing director of Keen Computers; and Ian Lovett of Barclays Bank.

Chance for entrepreneurs to meet the financial experts

SMALL companies are the lifeblood of the economy. That is the view of both the government and the opposition — a view supported by bodies such as the Institute of Directors.

In a bid to bring a measure of help to computer industry entrepreneurs who are either considering a start-up or who are currently running a small company, Computer Weekly has teamed up with the high technology and small business divisions of Barclays Bank to run a special one-day conference.

The aim is to bring together those who need finance, particularly at the pre-start-up or early-years stage.

Although the conference will centre around a series of presentations by financial experts familiar with the problems of small companies, there will be ample opportunities to meet financiers interested and willing to make money available to the small company with a good proposition.

The conference will be chaired by Sir Frederick Wood, chairman of the British Technology Group. The BTG is the government's principal arm for investing in new and advanced technology.

Sir Frederick will also give the keynote address in which he will assess how small companies can best avail themselves of existing financial sources and what basic information they should have when considering their first financing.

The government contribution to the conference will be from John MacGregor MP, Under-Secretary of State for Industry, who will address the delegates.

MacGregor's presence will be backed up by Dr John Parkes from the Department of Industry, who will be telling delegates how they can best take advantage of the many different government schemes for getting grants.

Aside from the various grants and rebates available in the assisted areas and in the enterprise zones, there are ten or more schemes available from the DoI and other sources, all designed to get money into new and promising technology start-ups.

One of the major initiatives by the government has been the changes to the tax regulations to enable investors to claw back tax in return for making a venture capital investment in a company which is less than five years old.

This is a move towards the American-style venture capital environment which is given credit for much of the vitality of the American computer industry.

John Robertshaw is the director of United Computer and Technology Trust, based in the City, and in conjunction with Ron Sheldon from Technical Development Capital he will explain how the new financial trusts set up in line with the recent changes will help small companies.

In the afternoon a series of speakers from the computer industry, most with direct experience of recently starting up and running companies, will address delegates.

Ron Weedon, from Keen Computers, will be joined by Eddie Bleasdale, the managing director of Bleasdale Computer Systems. Both companies and their managers represent the success which small companies can make from starting with small resources.

Barclays Bank is providing a manager, John Saunders, from the Oxford Street Branch, to explain how companies should approach their banks.

And finally Kevin Cahill, an associate editor of Computer Weekly, will join Ian Lovett, of Barclays Bank, to explain how to present that key document, the business plan, to maximise opportunities of obtaining finance on the right terms.

The First Time Financing Conference will take place in the Kensington Close Hotel, London on May 25, 1982. The attendance fee, exclusive of VAT, is £65, which includes supporting documentation and refreshments. Further details from Sue Bonnell, IPC Conferences, Surrey House, Throwley Way, Sutton, Surrey SM1 4QQ. Phone 01-643 8040.

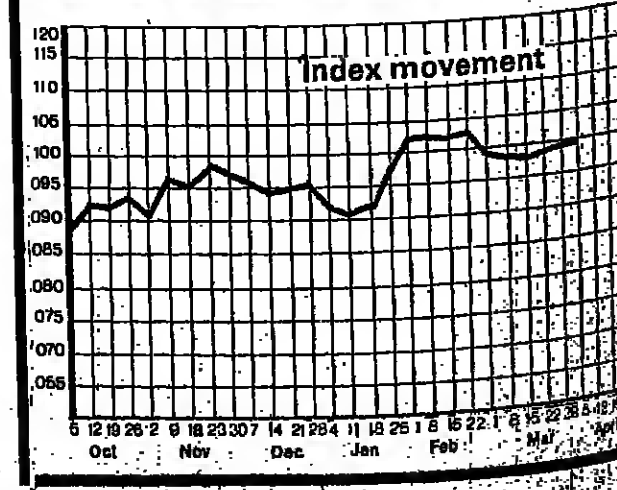
CW SHARES TABLE

Date 8/4/82 — Index 99.05 — Chnge -1.8

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence Chnge
185	101	ACT (App Comp) (25p)	105	-5
174	160	BOC Intl. (25p)	160	
23	18	B Sov Kent (25p)	19	
118	101	Chubb (20p)	118	+2
81	48	Cole Group (25p)	81	+1
250	240	C.A.S.E. (20p)	240	+2
730	628	De La Rue (25p)	676	
280	235	Excel (25p)	270	
690	078	Ferranti (50p)	690	-42
847	802	GEC (25p)	819	-6
64	33	ICL (25p)	64	-7
47	41	Kalamazoo (10p)	42	-1
277	223	Kode Int (25p)	267	+2
278	210	Memec (10p)	270	3
137	110	Muirhead (25p)	170	
278	218	N'mkt ('81) ($0.05)	232	+4
£35½	£29½	Norsk Data	£29¼	-£2¼
320	265	Office & Elect (20p)	320	0
527	445	Philips Lamp (f10)	872	25
388	348	Plessey (50p)	376	+2
97	67	Quest Auto (10p)	82	8
430	350	Racal Elect (25p)	305	12
250	171	Rediffusion (25p)	250	+22
468	415	Thorn-EMI (25p)	436	+20
90	78	UC&T (50p)	78	–
		OTHER MARKETS*		
90	80	Bus Comp (10p)	88	+3
867	416	Comp Serv (£1)	830	+115
130	75	Consult (C&F) (10p)	139	+14
170	125	NMW (£1)	125	-45
68	43	Rolfe & Nolan (10p)	43	–
108	78	ScanData (10p)	95	–
195	188	Star Comp (10p)	188	–
105	104	Trident Comp (10p)	104	–
95	82	Zygal Dyn (5p)	87	–

$ 1982 High	$ 1982 Low	US Stock	$ Price	$ Chng
29½	19¼	Amdahl	[illegible]	[illegible]
20¾	14¼	Apple Inc	[illegible]	[illegible]
28	23¼	Auto Data Pro	[illegible]	[illegible]
38½	31	Burroughs	[illegible]	[illegible]
48¾	38¼	Commodore	[illegible]	[illegible]
13¼	8¼	Comp Auto	13	–
18	12¾	Comp Sciences	[illegible]	[illegible]
10½	12¼	Comshare	[illegible]	[illegible]
35½	30¼	Control Data	[illegible]	[illegible]
36¼	27	Cray Research	[illegible]	[illegible]
63¼	28¾	Data General	[illegible]	[illegible]
49½	20½	Datapoint	[illegible]	[illegible]
27¾	17¾	Dataproducts	[illegible]	[illegible]
87½	72½	Digital Equip	[illegible]	[illegible]
23½	19¾	Elec Data Sys	[illegible]	[illegible]
8½	3¼	Gen Automation	[illegible]	[illegible]
38¾	28¼	Harris	[illegible]	[illegible]
43½	36¾	Hewlett-Packard	[illegible]	[illegible]
78	63	Honeywell	[illegible]	[illegible]
29¾	20¾	Intel	[illegible]	[illegible]
67¾	67	IBM	[illegible]	[illegible]
68	48½	Litton Ind	[illegible]	[illegible]
13¾	10	MDS (Mohawk D)	[illegible]	[illegible]
22	18	MSA (Mngmnt Sci)	[illegible]	[illegible]
12¾	10	Mngmnt Assist	[illegible]	[illegible]
8¾	6⅞	Modular	[illegible]	[illegible]
69	60¾	Motorola	[illegible]	[illegible]
23½	15¼	National Semi	[illegible]	[illegible]
45¾	40½	NCR	[illegible]	[illegible]
26¾	19	Perkin-Elmer	[illegible]	[illegible]
23¾	17¾	Prime	[illegible]	[illegible]
36¾	29¾	Raytheon	[illegible]	[illegible]
26¼	20¼	Signal	[illegible]	[illegible]
34	27¼	Sperry Comp	[illegible]	[illegible]
34½	24½	Storage Tech	[illegible]	[illegible]
27½	23½	Tandem	[illegible]	[illegible]
36	28	Tandy	[illegible]	[illegible]
82¼	70¾	Texas Inst	[illegible]	[illegible]
27¼	18¼	Tymshare	[illegible]	[illegible]
36¾	27	Wang Lab B	[illegible]	[illegible]
8	7½	Wyly	[illegible]	[illegible]

Table shows the closing prices of The London Stock Exchange on Monday and in America Friday. The share index is based on the prices of the UK companies in the table. Highs and lows have been adjusted where necessary.
* *Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



SIMON... Encouraging outlook for 1982.

Bureau lightens City gloom

A WELCOME change from the poor results delivered by some software companies recently is provided by City-based bureau and system house CCF.

Turnover rose by over 70% from £414,440 in 1980, to £716,835 for 1981. The rapid advance in turnover was followed by a gross profit improvement of just over 22%, from £82,984 to £100,209.

Net profit after tax was £100,310, which was stated before an extraordinary item of £28,125 relating to the purchase of Payline Computer Services which CCF bought in 1980.

According to Tim Simon, chairman and managing director of CCF, the Payline purchase was completed in 1981 for a nominal sum and the operations of Payline were fully integrated into the CCF bureau.

CCF was one of the smallest companies to take advantage of the Stock Exchange's unlisted securities market last year, and the shares are quoted at around 102p.

CCF recently won an ICP million-dollar award for its Fiscal stockbroking package. This allows a stockbroker to perform many of the very complicated accounting procedures associated with share purchase and sale, and has proved widely popular in the City.

Simon says that the volume of orders, particularly overseas inquiries, is at an all-time high, and he is predicting that the company will start marketing its products in Hong Kong and in the US later this year.

The only gloomy item in Simon's report was the news that the Payline bureau had made a £34,000 loss. Simon called this "disappointing".

Although Simon fights shy of making a specific forecast for 1982, a number of City analysts are looking at the company and suggesting a figure in the region of £200,000 to £250,000 for gross profit in 1982.

Turnover record

PAYROLL, pension and personnel systems supplier Peterborough Software increased turnover to a record £3 million for 1981, a 38% increase over 1980. Gross profit also increased, but the policy of revenue growth, rather than high profitability, will continue. The commitment to software rental rather than outright sales will remain.

DEC cautious despite 27% growth

by Kevin Cahill

KEN Olsen, president of Digital Equipment, managed to walk the very narrow tightrope between sensible caution and downright gloom when he spoke recently to the financial community in New York.

He did so to a background of growth at DEC which is still running at 27%, though this is a deceleration from last year's 35% growth rate.

There are few companies in any industry quite like Digital Equipment Corp, known to most of us as DEC.

It has neither paid, nor forecast a payment of, a dividend, yet it has grown in the space of 24 years, from a group of three engineers in Boston, to a highly profitable $4 billion corporation.

The company has always been able to sell shares to finance growth. In fact, DEC has a fairly consistent record of selling stock at a higher price per share than most US companies, despite the lack of dividends.

Lately the shares have fallen from a high (last year) of $113 to about $71. Most of this slide can be attributed to the state of stock exchanges in America, where continuing high interest rates and budget deficits have kept share prices depressed.

Olsen spoke to investment analysts in New York in a tone that was distinctly cautious, with no forecasts.

He listed the additions to the company's products which he expects to be announcing over the next year, particularly at the top end.

He said that DEC would continue to enhance its 36-bit 10/20 time sharing mainframe by releasing a new model towards the end of the year which would be more powerful than the existing top-end 20/60.

In the VAX series, now the workhorse of the DEC product line, the company is intending to supplement the 11/780 and the 11/750 with a smaller 11/730. This machine will be announced later this month and will be available for delivery shortly afterwards.

Olsen also announced that DEC would be making available software and hardware to enable the VAX range to work in clusters.

Finally, he confirmed that DEC is working on not one, but two different micro versions of the VAX machine.

He reaffirmed his faith in the longevity of the PDP-11 series and forecast that the company would introduce several more machines at the lower end of the range.

The long-awaited personal micro from DEC is likely to be a reconfigured PDP-8 based system like the DECmate. DEC obviously expects to tap the very large existing software base for the PDP-8.

Additionally, DEC will launch two other high-end personal micros. None will be aimed at the hobbyist market, according to Olsen.

It all looks like a huge drive on the small business systems market, with Olsen predicting that the company will launch and distribute all three products via its own sales force and shops (in the US) to end users.

The three small micros would not affect the personal option on the VT 100 which DEC introduced last year. That marketing strategy is believed to have had very substantial success among the better than 250,000 current users of the VT 100.

Olsen reiterated the company's commitment to the DECnet and Ethernet strategy. He said that the company would continue to support Ethernet for tranferring data between sites and DECnet for data transfer within the same building.

During a question-and-answer session with the analysts who watch computer companies on behalf of investors, Olsen revealed a substantial change in the availability pattern at DEC.

Even at the end of last year UK dealers were complaining that some DEC equipment was on delivery dates up to one year ahead. Olsen made clear that most of DEC's equipment was now available within 30 to 90 days of the order being placed.

Part of this easing on the delivery schedules will be due to slackening orders, particularly in relation to the commercial market where some analysts believe that DEC has been experiencing more than the usual difficulty in moving kit.

However, DEC has maintained growth and expanded its sales to both the educational and manufacturing sector. The company has also benefited substantially from the move to an authorised distributor network, which is currently being implemented in the UK.

In Ireland there are rumours that the company intends to increase employment at its recently opened Clonmel factory. This is in contrast to the situation last year when the pace of new hiring slowed a little at the company, which is nevertheless growing at more than 25% per annum.

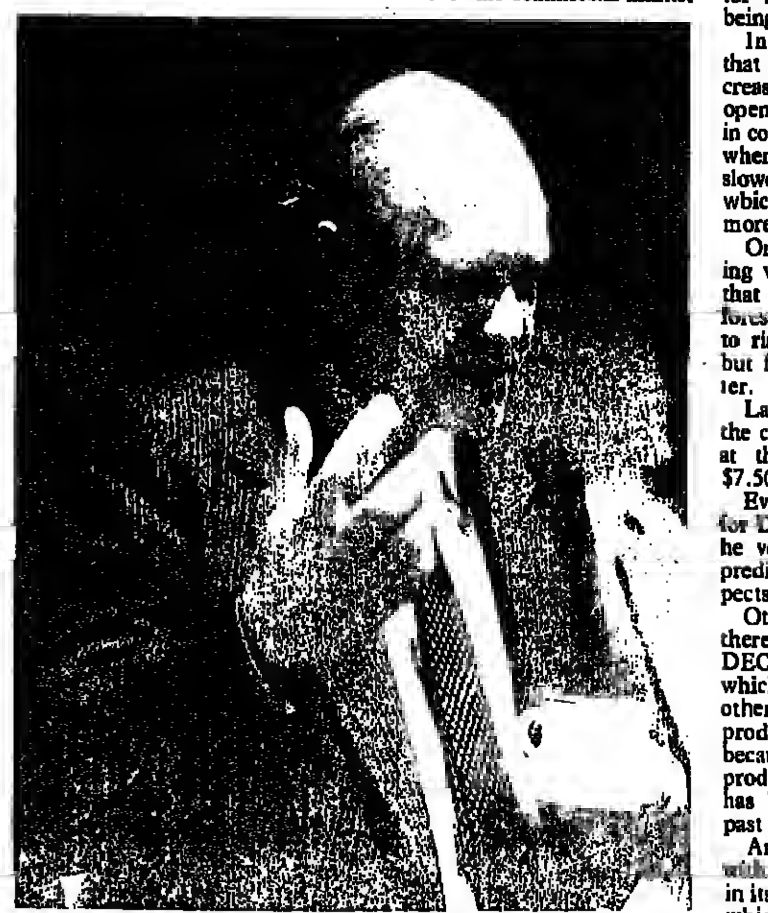
One of the analysts at the meeting with Olsen, Peter Labé, said that based on what Olsen said he foresaw profits at DEC continuing to rise for the next two quarters but flattening in the fourth quarter.

Labé's forecast for 1983 is that the company will maintain profits at their current level of about $7.50 per share.

Even Labé says that his forecast for DEC is very conservative, and he very specifically lined up his predictions with the way he expects the US economy to behave.

Other analysts suggest that if there is any significant upturn DEC will be the one company which will benefit more than any other, partly because of its existing products and markets and partly because of the vast amount of new production facilities the company has brought on stream over the past two years.

And DEC entered the recession with a veritable mountain of cash in its coffers, over $700 million, on which the company is earning substantial interest.



OLSEN... Three business micros up his sleeve.

Forecast is showers and sunny spells with occasional storms

WITH no end in sight to a recession which is now beginning to look even worse than 1974-1975's, American analysts are re-doing their sums on a grand and rapid scale.

Peter Labé, the computer industry analyst at New York stockbrokers Smith Barney Harris Upham, warns in a recent review that first quarter earnings are likely to be mixed with a 'healthy proportion of adverse results'. More alarmingly, perhaps, he also suggests that order news 'is unlikely to be favourable'.

He inclines to believe that this current recession will be deeper that in 1974-75, but slower in development and with a slower recovery. On that basis he has revised a series of first quarter earnings forecasts which show a number of industry blue-chips with profits falling by as much as half.

Honeywell is shown as the most severely hit, with a 55% downward revision in earnings from $2.25, to just $1 per share.

Honeywell has itself warned that its profits will be down.

NCR is shown with a fall of 36% in its first quarter earnings per share from $1.02 to 65c.

Amdahl Corp is revised downwards with a 46% fall in earnings, in line with the recent gloomy forecasts from the management of the company in Sunnyvale, California. Amdahl has blamed a delay in getting the company's new 580/60 computer on the market for a predicted earnings slowdown in the next three quarters.

Labé's medium-term view of Amdahl is very bullish, and he has forecast that the company will resume earnings growth when deliveries of the new computer begin in the fourth quarter of the year.

Burroughs is still on the recovery track with a forecast up 11% in first quarter earnings, from 54c to 60c.

The absorption of Memorex into Burroughs appears to be continuing successfully with no major setbacks reported so far, and with a continuing picture of improved profits emerging from Burroughs.

Data General, despite all the interesting publicity surrounding the book The Soul of the Machine, which describes how the company designed and built its 32-bit minicomputer the Eagle, certainly has not put wings on the profits. Labé forecasts a 40% fall in the quarter one earnings per share from 83c to 50c.

But not all is total gloom.

Labé uprates his forecasts on both Prime and Tandem.

Prime, which was hit by a great deal of uncertainty last year when its founder suddenly resigned, is now coming back in favour with a forecast 28% improvement in earnings to 36c per share, against an original estimate of 28c per share for the first quarter.

Labé forecasts a 41% rise in Tandem's earnings, from 17c to 14c per share. Labé is forecasting dramatic upswings for two companies. Comdisco, which has extensive operations in the UK and Europe, is forecast to improve its earnings by 70% to 70c per share for the quarter.

Network Systems, admittedly starting from a very low base of forecast earnings of 3c, is predicted to rise to 7c by Labé, an effective rise of 133%.

Generally, the results and the forecasts are very springlike: showers and sunny spells with the occasional storm seems a good summary.

HUMAN TOUCH

Nature's way to accuracy

Cliff Dilloway is an independent consultant specialising in accounting software, taxation and payroll.

THE word "redundancy" had a meaning before ever it became a euphemism for what used to be called the sack. In science the word refers to extra parts or things not functionally necessary.

Nature abounds with redundancy. We humans can manage on one lung or a single kidney. Pity we do not have a second heart or brain, but perhaps they will come with a few more million years of evolution.

Communication outside a computer is full of redundancy. Most conversations consist of repetitions to a point just short of being boring.

Computer designers built up enough redundancy to meet their criteria for reliability with check bits and cyclical redundancy checks. But systems designers have embraced the "computer-must-be-right" philosophy, and that puts a strain on the human beings involved.

The computer demands an unattainable degree of accuracy from a human being. The human needs "props" such as check digits and batch totals to stand any chance of satisfying the computer's standards.

The double entry of accounting is an early example of man's feeble attempts to get his numbers right. Double entry is 100% redundancy turned to good use by providing an alternative analysis of the data. (Another example is the writing of the amount on a cheque in words and figures).

Further examples of usable redundancy in naturally occurring data should be sought out by systems designers. On a pay increase both the amount of the increase and the new rate of pay are usually available. Who ever had an increase and was not interested in both these figures?

Ask for both to be entered into the system and the extra redundant work can be justified by the special need for accuracy on this item of data.

The same principle can be adopted in the accumulation of sales from a till. Enter the sales total, the tender and the change.

The DHSS uses a "check-brick" on National Insurance numbers that consists of the first three letters of the surname and up to two initials. Redundancy indeed, but probably better for detecting mis-matches with contribution records than the simple check digits used by the Customs and Excise on VAT registration numbers.

Redundancy is nature's way of ensuring that a system can continue to function.

The humble computer would do well to follow her lead.

Cliff Dilloway

10 YEARS AGO

From Computer Weekly of April 13, 1972 . . .

A DROP in orders and the continuing fall in industrial investment were the two main reasons given by GEC-Elliott Automation for some 500 redundancies at its Kidsgrove, Staffordshire factories . . . Department of Trade and Industry statistics on the computer services industry for the third quarter of 1971 revealed a surprise drop of 5% in total income compared with the second quarter . . . A Design Council award was won by Standard Telephones and Cables for its STC 600 ADX computer-based telegraph communications system . . . A low-cost range of computer output microfilm printers, designed for on- and offline applications, was announced in the UK by Calcomp.

SYSTEMS THOUGHTS

The case of the disappearing minicomputer

Anne Leeming works in the Centre for Business Systems Analysis at City University

A RECENT report on computing, Next Five Years* fuelled a suspicion in my mind that in some ways the minicomputer is disappearing from the current scene. The report emphasised the part the microcomputer will play in desktop applications, local networks, and as part of distributed systems.

Similarly executive information systems were described as the successor to management information systems and so will need extensive and expensive hardware to support them. The most important aspect here is just what information individual executives or managers need to know, and much effort has already been put into this area.

The report treated us to glimpses of such goodies as automated office systems, computerised message systems and electronic files. But there was no mention of the minicomputer as such.

A survey of Computer Weekly over the last weeks shows few news items on minis, and a glance at the job pages again shows a heavy requirement for work in mainframe environments; but very little was wanted in the mini environment.

The micro environment has grown so rapidly that it has spawned a large Press entirely devoted to its own needs; nothing like that has happened for minicomputers.

The micro opened the door to so many new users who had no previous experience with computers that it was inevitable something of the sort should happen. The mini did not have quite the same impact on so many people.

The current state of computing owes a tremendous debt to the minicomputer. All its attributes of ruggedness, reliability and low cost were essential steps in the development of today's micros and many features of contemporary mainframes. We could not have done without it, and of course there is a wide range of applications that run on minis externally and successfully. However, for the future, the mini as a piece of raw hardware does not appear important.

It is there, but it is hidden beneath its new function as a dedicated work-horse carrying a load of software for a particular task in the office; as a staging post in a network.

How are we to prepare tomorrow's systems analysts for these possibilities? The education of systems analysts and applications programmers includes work on hardware of all sizes. The environments we try to communicate to the students cover all types of organisation with requirements for data processing capabilities ranging from the very large to the very small.

So we are left with the problem of how to treat the mini. Should it be treated as a large microcomputer or as a small mainframe?

The eny, for some time, has been that software is more important than the machine it runs on. The fate of the mini well illustrates this aspect. The machine is becoming subservient to the software it is carrying.

Since the mini is now a well-established piece of machinery, analysts can concentrate fully on designing software to meet the requirements of its users without the requirements of the machine intruding.

The minicomputer has earned its place in the data processing world.

Anne Leeming

**The Next Five Years.* Published by EDP Analyzer

DOWNTIME

Dam this technology!

LLANFAIRPWYLLGWYNDUDNO (in Wales) was the proud possessor of a new dam providing hydro-electric power to the valleys of God's own country. Due to the undulating nature of the terrain, the dam-keeper's cottage had to be built some distance away, and out of any direct line of sight to the aquatic construction.

In order that any emergency might be brought to the responsible party's attention, an automatic telephone dialling system was installed. Should the water level overflow, the dam-keeper would receive a message to the tune of: "Help! Help! the dam's overflowing!"

Just in case the incumbent's telephone should remain unanswered, the system would automatically telephone a further four interested parties in order that the relevant corrective action might be taken.

Guess what? The mountains of Cymru were subjected to a downpour of truly Mancunian proportions. Water levels rose, and the automatic system detected that the dam was indeed in imminent danger of overflowing.

The dam-keeper was not at home at the time of the call. But he had prepared for such an eventuality.

The phone was answered. "Help help, the dam's overflowing," bleated the tape recording from the dam.

"I'm sorry I'm not in at the moment, please leave your message after the tone and I'll get back to you," replied the answering machine.

This conversation continued throughout the Bank Holiday weekend (notice that it rained very heavily on a Bank Holiday), the water merrily flowing over the top of the dam throughout the three days.

Ingenious

PRINCE Muhammad Al-Faisal of Saudi Arabia some years ago suggested an extraordinary way of slaking his country's thirst for God's wine.

Drag an iceberg up from the Antarctic, put it in dry dock, slice it into manageable chunks with red hot wires and pump the water up into reservoirs and irrigation channels.

A team of tugs would take it in tow to Saudi Arabia. But bergs are lethal things capable of sinking the most titanic of ships on contact. So for the time being the idea was dropped.

Now it has been resurrected with an ingenious idea sent to me by a programmer in Bath, who had better remain incognito.

He suggests that computer-controlled robot fish could be used to guide and push the berg through the waves. Possibly, he writes, the difference in temperature between the berg and surrounding water could be exploited in some way to power the robots.

Keep the ideas coming, readers!

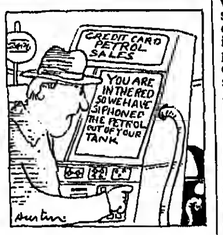
Well met

THERE are certain truths that we hold to be self-evident. Margaret Thatcher will not execute a U-turn. Ronald Reagan can't act. Robb Wilmot breakfasts on mass redundancies.

So imagine my surprise when bumble Chad chanced to meet the last-mentioned person, and he turned out to be helpful, courteous, softly-spoken and charming. Where was the hard-nosed whizz-kid so popular with the gutter press gossip columns?

Rather than blitzing in, delivering a high-speed jingoistic speech and rushing off to be dynamic elsewhere, RW spent the whole day in relaxed mood, talking knowledgeably on a whole gamut of technical topics, never looking at his watch or twitching nervously.

Much as it goes against the grain, I, a cynical hack, had to admit that, well, I, er . . . , *liked* him.



Beware of imitations

THE trouble with the youth of today is that it is only satisfied with the real thing. My generation was satisfied with teddy bears, leggo, meccano and plastic imitation wrist-watches.

Now they want pet pythons, breeze blocks, power assisted bicycles – and real computers. How nostalgic it was then for sentimental old Chad to come across an imitation pocket calculator while browsing through the hardwares of a junk shop. Hand-carved in ivory with the keys engraved in cut crystal glass it was too. Price £10.

"You can buy a real one for half that," I informed the dusty fellow in charge of the shop.

Overheard

THE British public appears to be taking to IT Year like a duck to p'orange sauce. While perusing a selection of remarkably sophisticated word processors and electronic typewritings in a well-known bigb atreet shop, I overheard the following conversation.

Shop assistant: And this one is electric madam.

Customer: Now let me get this straight. If you have to plug it in, it's an electric. Right?.

Shop assistant (politely): Yes madam.

Chad

FOCUS

Guidelines for office of future

ENCOURAGED oo doubt by Information Technology Minister Kenneth Baker who has been telling the UK engineering world to "automate or liquidate", IBM has responded with a set of standard guidelines for the factory of the future.

Before getting involved in robotic standards the industry would appreciate some firm guidelines on the standard office of the future. High on this list would come such issues as software flexibility, equipment interfacing and the ability to switch not only networks but operating and communications routines.

Backing the standards campaign would come the vexed and often thorny problem of adequate documentation.

In the computer centre search procedures usually involve an installation hunt for the one and only copy of the (outdated) operations manual or software update volumes.

Standard routines for many installations involve a mad copying operation for everything in site. This includes system tenders, contracts, user application specs, flow charts and coding sheets. Providing the right shelf can find the key to the documentation locker or cabinet, recourse to contacting the systems or programming personnel should be avoided.

Even if documentation retrieval procedures are successful, there is no certainty that the relevant information will be found present and correct. The documentation was probably present when the system first went live, but subsequent working amendments leave if now far from correct. Those responsible for lack of documentation care and attention have probably scattered far and wide across the industry, keeping several steps in front of their misdeeds.

Motivating good levels of installation standards is a matter close to the heart of the NCC and more recently, the IDPM.

The NCC has long flown the standard banner and devoted much course time and material to promoting good documentation. The IDPM believes that lack of standards in computing is a direct contribution to the low public esteem of the computer industry.

DP management requires little encouragement to promote the good standards cause, being only too well aware of the amount of lost time, lost patience and lost tempers inflicted from lost, missing or incomplete documentation.

Meeting the user's urgent requirements to amend the accounting program should have been a matter of a couple of hours for a junior programmer. Instead, the task is as baffling as the latest edition of the BCS Journal or that ready-made "off-the-shelf" package which turns out to have been designed and implemented in North Taiwan or East Germany.

Before long much of the installation is involved in the tracking of critical flow paths, avoiding dead ends, no entries and diversions which would do credit to the traffic flow in down-town Soho.

Coding appears to come easier to programmers if documentation material embraces the backs of punched cards or the back of an operators log. System teams appear to prefer the refinement of old office memos or envelopes (or A4) to record their designs for posterity. With the trend towards interactive programming and analysis making use of a terminal, documentation is becoming ever less a standard practice.

Unless those concerned organise routine dumping procedures, the DP manager could well find some dumping procedures of his own.

Alan Simpson

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, April 15, 1982

A damp squib on data protection

THE government's long-awaited White Paper on data protection must be the dampest squib that has been seen in many a season. Legislative control of computer databanks has been awaited for years and a vast body of evidence has accumulated to show the total inadequacy of present safeguards.

Now we find that satisfactory answers have still to be devised, and we are little closer to an ideal of how the legislation, which could still be three years away, will affect us in practice. This is particularly worrying to those involved directly in the operation of computer systems, who will eventually have to implement the controls.

Those who have been saying all along that there are no answers may take some comfort from this, but few others will. It is reasonably clear that the databanks that most worry the civil liberties lobby – police and security intelligence files – will not be affected by the legislation at all. Not only will individuals have no right of access to data on themselves, but the proposed registration authority will not even be able to oversee the way the systems are run.

The White Paper specifically suggests that there should be no right of access to records kept by social workers. Since these files are the most prominent in the minds of the public, there are bound to be claims that the legislation is pointless.

□ □ □ □

But we should not talk as if the White Paper proposes these things definitely. It is a mass of vagueness that would make the Delphic oracle seem as explicit as an Algol program. For some unspecified categories of data, we are told, there will need to be special regulations, as the general principles laid down in the legislation will be insufficient.

What might these regulations be? Where would they come from? How would they be enacted?

It is stated that the general principles are too imprecise for a breach of them to constitute a criminal offence. So what force of law would the regulations have?

There should be a civil remedy, says the White Paper, for those harmed by improper data handling, adding, "It is for consideration what form the liability should take." Indeed it is, but if the Home Office has not been considering this for the last three years, what has it been doing?

Even the basic scope of the proposed legislation is unclear.

□ □ □ □

The principles laid down by the Younger committee in 1972 state that every computer system must have a specified purpose, and that purpose must be legitimate. But how precisely must the purpose be stated? Surely "helping my business make a profit" is a reasonable purpose, but it could cover a multitude of sins.

Who will judge "legitimacy"? The registrar? That would give him enormous arbitrary power. Would, for instance, advertising mailing lists be a legitimate purpose? Doubtless they will be permitted, but plenty of private citizens will object, because they have different views of what is legitimate.

The registrar would have power to inspect data files before accepting a registration. Would he also have the power to inspect after a system has been registered – shades of the tactics of VAT inspectors?

The one certain result of all this will be public bafflement. Ministerial statements have already convinced many people that a data protection law will give them a means of finding out precisely what data is held about them and where, when in fact no central register could possibly do that.

The real danger is that legislation will be passed before any answers to these questions have been found, and we are faced with the task of implementing woolly and dangerously flawed laws.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by D. O'Brien of Dublin, who wins £5.

One of a handful of men who writes programs for computer games, John Richards, found it impossible to explain how he worked because the English language just cannot cope with the new terminology, and the speed of computer development.

Irish Independent

LETTERS

Problems of expanding companies

I WAS delighted to read (CW, April 1) that your survey carried out with Herring Son & Daw highlights many of the problems experienced as a result of the expansion and movements of high technology companies. I was concerned, however, that the headline Red Tape Ties Up Computer Firms gave the impression that local authorities were generally obstructive and unhelpful to such companies.

This is certainly not the case in Basingstoke, where in fact, quite the opposite is true. If it were not for the knowledgeable and flexible attitude of the council towards high technology companies of the calibre of IBM, Digital, Motorola, Sony, Sperry and International Aeradio would not have moved to the town in the past few years.

My experience in trying to help these companies leads me to support the view that a rethink is urgently required for the "use classes" which rigidly separate industry from offices. Local authorities, however, are bound by the law and it is statutory change that must be encouraged. At Basingstoke the "use classes" are interpreted extremely liberally when the occasion demands it, and we currently have examples of new buildings under construction which could double as offices and research space or manufacturing areas.

There is a considerable amount of land available in Basingstoke, much of which is owned by the council. I would welcome any inquiry from companies involved in high technology and I feel sure they would be pleasantly surprised by our willingness to find a solution to their problems.

We recently completed a 250-question questionnaire on the town prepared by a Japanese company considering setting up a new factory in the UK. Apart from questions on such matters as the frequency of earthquakes, we also had to give a one-line reply to a question asking what was the local philosophy! We assumed that the work ethic was what they were after.

With a very few honourable exceptions it is the institutions and developers who carry most of the blame for the dissatisfaction expressed in your survey. Many of the buildings they currently construct probably will never let, and yet they are frightened of buildings constructed especially for high technology uses "because the buildings may not be relettable if the present computer company vacates it".

The value of your survey is surely that it may help to bring home to such conservative thinkers that they have it the wrong way about. It is the conventional developments that they will find difficulty with in 25 years' time, and not the high technology ones.

Credit where credit is due, please!

A. R. VINES
Chief estates surveyor
Basingstoke and Deane Borough Council.

Better at teaching than diagnosis

I READ with great interest the thoughtful article (CW, March 18) by Kevin Cahill about our microprocessor-aided diagnostic programs; and I should be grateful if I might make one or two points to clarify some issues.

Chiefly, I was concerned about the data relating to the diagnostic ability of doctor and computer, much of which is hard to understand. The casualty department doctor does not (in most hospitals) send the patient direct to the operating table, nor does he send home 36% of patients to develop further acute symptoms, nor is barium meal a relevant investigation.

Finally, the data relating to the computer is too laudatory by far. The implication is that the computer makes virtually no errors! I wish this were so; but the fact is that the overall computer accuracy of 91% relates only to its use by senior doctors – and in the casualty department, an accuracy of 75%-80% is more common. This may be a useful improvement, but it is far from infallible.

As I am sure most would agree, there is a great need for caution in implementing automated decision-making aids in clinical medicine, for we currently know very little about these aids and their use. To take one obvious example, it remains entirely possible that doctors may become dependent upon the computer and therefore when its use is withdrawn they may become *worse* than if they had undergone more conventional training.

Although the DHSS (as Cahill reports) has injected some timely funding for a cautious expansion of the system, it will be several years before we can even begin to consider use more widely than in a few (closely monitored) centres.

On a more positive note, I was delighted to see attention drawn to the educational use of computers. One of the most interesting and encouraging features of work in the UK, US, Sweden, Australia and Mexico has been the improvement in doctors' own performance levels while exposed to this type of diagnostic aid. Maybe this improvement merely results from constraints of the system guiding the doctor towards a careful, structured, well-defined history and examination. Whatever, the immediate potential of such systems would seem to be in medical education rather than in surrogate diagnosis.

Finally, I am particularly grateful that reference was made to the role of (over 500) colleagues around the world in helping to set up our own system. Their input has been indispensable; and if (eventually) the system described proves to be of any use, then much of the credit should rightly be directed towards those people who have "packaged" their own experience for the benefit of other less experienced doctors and students.

F. T. de DOMBAL
University of Leeds.

Hi-tech viewdata magazine

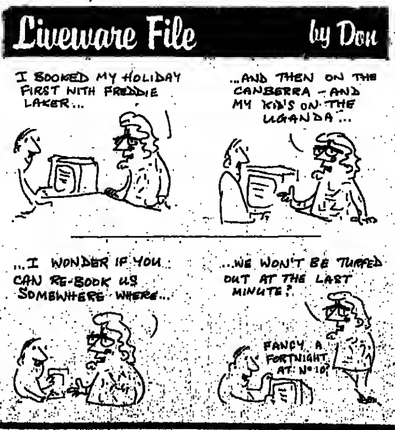
IS this some sort of April Fool's joke? – I thought, as I read with great surprise the article Electric Magazine on Prestel by Donald Kennett (CW, April 1) which stated that "apart from the pioneering efforts . . ." the electronics market has not so far been catered for.

Viewfax 258 has been offering a free, daily updated computer/high technology oriented magazine on Prestel since February 1, which as a viable concern has already reached number nine in the most popular information providers' chart, number one in this particular field.

We are actively involved in Prestel's latest project to promote telesoftware and have dedicated part of our database to the transmission of free programs which can run on most personal computers.

LINDSAY REID
Managing director
Viewfax Ltd
Birmingham.

Liveware File by Don



Arming the Luddites

SOT, Stop the Onslaught of Technology (Computer Weekly, April 1) has reason to kick back at technology abuse; however they resemble ostriches complaining of the use of the very material in which their heads are buried!

Chip-based technology has given the UK the opportunity of the century to innovate new industry, and service newly created international markets. Release from the mundane gives time for new initiatives in decision making at all levels, which should bring about both greater business efficiency and human satisfaction.

However, the computer industry is arming the Luddites movement with ample feathers to flutter about. Sales forces in particular are not showing management the limitations of their products, and this dishonesty is creating disillusionment and distrust.

Employees unnecessarily robbed of their livelihoods, and management afterwards realising its key resources have vanished are floundering in a sea of unwanted information.

Management is not however blameless in its naive belief in thrusting the responsibility for employment back into the hands of the government. Eventually the backlash will be fully appreciated as crippling direct and indirect taxation strangles the opportunity to make use of the benefits that potentially could accrue.

ANTHONY BUSK
Co-Ordinator of Association for Christian Management
Haywards Heath
Sussex

The Editor welcomes letters commenting on subjects published in Computer Weekly, or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication. Letters may be cut.

OP SPOT by Andrew Thomas

Standby generators can provide peace of mind for DP managers worried by the effects of power failures. This week we look at some instances of this faith being ill-founded.

Enough to make your hair fall out!

"BE PREPARED" is not only the motto of the Scouts, it was also the corporate plan of Intercontinental Hair Transplants, based in New York.

IHT had a computer installation on the 25th floor of an office block. To ensure that any interruption to power supplies would not affect its processing capability, the company installed an uninterruptible power supply – a standby generator and a large bank of batteries to keep the alternator running while the generator was being started.

Because IHT didn't own the building, it had to install the batteries and generator in its own part of the 25th floor. But it hadn't reckoned with City Hall.

The administration refused IHT permission to locate the large diesel tank on the same floor.

When the installation was complete, a test was carried out, the standby equipment performing perfectly. IHT was prepared for the worst.

Oh yeah?

Sure enough, the power went off one cold December morning. The batteries cut in automatically, and the generator's starter motor spun in anticipation. But the mighty diesel refused to start. The batteries ran down, and IHT's computer joined the rest of the building's equipment in slumber.

The cause of the generator failure was soon discovered – because the fuel tank was 25 floors below, a fuel pump was needed to lift the fuel to where it was wanted. An electric fuel pump, powered from the building main, which was sadly voltless.

A solution to this embarrassing problem was quickly found. It was suggested to the people responsible for the blunder that their future employment prospects might be more rosy if they were to carry the fuel in buckets from the basement tank to the generator upstairs.

And upstairs it certainly was. Twenty-five flights of them. Lifts need power too.

Sense and sensibility

CHELSEA CHERUBS, the exclusive London babywear emporium and parent company of the Spoilt Brat chain of high street shops, had a small but busy computer department just off the King's Road.

To prevent any power cuts causing a rash of nappy shortages, a standby generator was installed on the roof, ready for the power failures.

Late one December night, when the snow lay deep and crisp and even, the warmth and security of an all-electric Cheyne Walk was suddenly replaced by a cold, Stygian darkness, only occasionally relieved by the headlights of late-returning revellers.

Chelsea Cherub's generator sprang into life, restoring the lifeblood of its computer. For three hours, while copious quantities of caviar risked an ignominious end in the refrigerators of Chelsea, processing continued as normal.

The next morning, there came a knock on the door.

"Good morning sir," smiled the policeman, "I've got something for you."

"Oh, what?" enquired Chelsea Cherub's chairman.

"A court order sir, it seems that you've been making rather a lot of noise during the night, and should it happen again . . ."

"Noise officer? what on earth do you mean?"

"Some kind of generator I believe sir, just keep it turned off and everything will be fine. This is a residential area you know."

More power cuts followed, but Chelsea Cherubs remained silent pending the installation of an acoustic housing.

Generating problems

RON GREEN Surgical Supplies was worried. Its computer installation was vital. What better protection from the vagaries of the British national grid than a standby generator?

And so it was that one was installed, tested, and found to be perfectly suitable.

Problems started when RGSS assumed that the generator firm was carrying out routine maintenance on its equipment, and the generator firm assumed that RGSS was doing it.

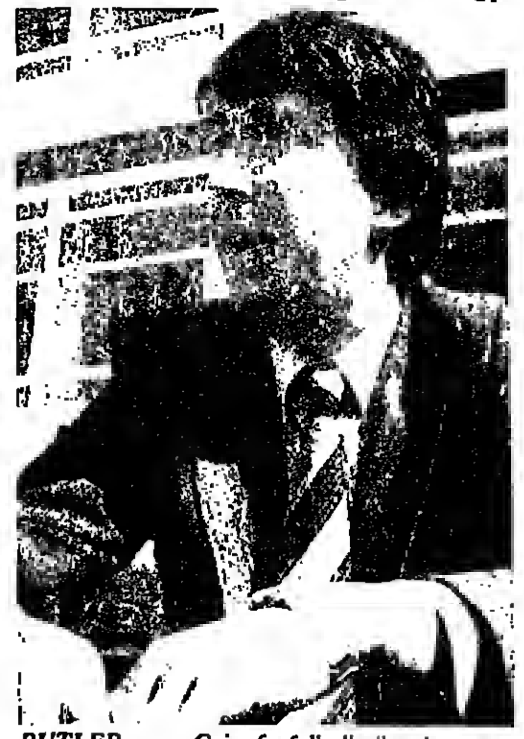
A year went by without a power failure, and because of the absence of any preventive maintenance, the leak in the generator fuel tank went unreported.

By the time the power actually failed, the generator housing was nicely filled with explosive fumes. The starter motor leapt into action, and the operators ventured out into the car park to see what had made the noise.

They were greeted with the sight of pieces of generator raining down on their Cortinas.

PROGRAMMERS PAGE by Philip Hunter

WILSON . . . Users prefer systems with proven software to the latest hardware.



BUTLER . . . Going for fully distributed system at Oxford Polytechnic.

Polytechnic aims to popularise computers

"WE want to give every student in this Polytechnic some experience of computing while they are here," declares Nick Butler, head of the computing centre at Oxford Polytechnic. He encapsulates the attitude of many polytechnic computer chiefs anxious to demonstrate how near they already are to achieving this.

"Only 150 students used our centre when I came some years ago," says Butler. "Now 2,000 do."

The same department heads take equal pains to emphasise that they do not ram computing down the throats of the students. The aim is to popularise computers – to show their value and ease of use in the different disciplines: Legal packages for law students, spelling checkers for English students, graphics for everyone.

Architectural students have done particularly well. Yet many polytechnics cannot afford the most powerful system for architects called BDS, Building Development System, which costs £85,000 a year to rent.

There are other symptoms of a recession. Many polytechnics cannot afford colour graphics terminals for example. These would do their computer departments' crusade a power of good.

Most polytechnics have a computer department set up to provide some of the following:

- Computing facilities for other academic departments.
- Software for local schools and facilities for its distribution.
- Research, sometimes in liaison with industry.
- Administration applications such as timetabling.
- Courses in computer science.

The list is arranged in order of the emphasis given by the various department heads and others I spoke to, and does not involve any other breakdown.

It may seem odd that courses come last, but here I must take care not to mislead. Every polytechnic is a law unto itself and arranges its departments differently. Some, such as Brighton Polytechnic, have independent computer science departments exclusively dedicated to teaching, while others such as North London provide no courses in computer science as such, other than to academic staff in need of some experience.

Oxford, on the other hand is directly involved with teaching, as it is with the other four main areas of polytechnic activity.

Most polytechnics are funded by local authorities, but five in London are funded by ILEA, the Inner London Education Authority.

One of these is North London Polytechnic. Peter Jeffreys, head of the computing department there, thinks that being under ILEA rather than a local authority has little impact other than that the five polys frequently get together.

"There is one difference though – many of the other polys get involved in doing rates and wages for the local authority," he says.

Most polytechnics are tied up with local schools in provision and distribution of educational software. Such is Oxford, where the computer acts as a filing cabinet for all Oxfordshire schools, which have Research Machine 380Zs.

The schools can dial up from a local terminal to use programs and packages maintained by Oxford on the central computer.

But the schools mainly use the computer in batch mode, submitting jobs for punching at Oxford. This is a cheaper way of letting the children get their grubby hands on the computer than the alternative of providing an adequate number of terminals.

Many other polys offer similar facilities, but Hatfield, one of several to boast the most modern computing facilities, goes one better.

It is working on a trial connecting the Prestel Gateway to local Hertfordshire schools through its PDP-11/70.

Previously Hertfordshire schools had linked in to Hatfield's 11/70 through a GPO line, which only allows 30 characters to pass each second. The Prestel link is faster and allows automatic costing, so a track can be kept of software use.

If polytechnics are to tighten up on their software supply and make some money out of it, they will need such a facility.

Gateway allows private databases to appear as if they reside on Prestel without actually doing so. Teachers can use it to browse through catalogues of programs and packages and have their choice fed down the same channel. This could result in the school making liberal use of Prestel's information.

Polytechnics vary greatly on the computing effort given over to administration. Oxford and Newcastle both dedicate a lot of time – computer and human – to it and have sophisticated timetabling systems in which other polytechnics have expressed interest.

Oxford runs a modular degree: students can combine two fields such as mathematics and computing in one honours courses.

This was such a nightmare for compilers of timetables that a computer system was deemed necessary. The system written involves much mixed language processing with the statistical analysis parts written in Fortran, data processing parts written in Cobol and information retrieval in Info.

Most research is done at polytechnics where computer science is taught as part, or all, of an honours degree. A project is a major part of the final year of the computer science course at Oxford, and students are encouraged to collaborate with people outside the polytechnic.

One such project involved digitising aerial photographs of rubbish tips to estimate the volume remaining. There are also postgraduate projects such as collaboration with Culham Laboratory over Jet, the Joint European Torus Project.

Some polytechnics are stronger than others in their willingness to co-operate with industry in research projects. Brighton, for example has indirect contact through staff consultancies. "But these are not highly formalised and are likely to be more of a feature in future," says head of Brighton's computer services department Tony Warburton.

What else of the future? Several department heads would like to see fully developed distributed systems. Butler argues that graphics facilities are the next logical step for many people.

But opinions vary. Neil Wilson, head of the systems division at Oxford, differs from his boss. "What people want is software and there is not yet enough good software around for distributed systems," he says.

PUZZLER

?	?	?
?	?	?
?	?	?

THIS Magic Multiplication Square, contains nine different positive integers, and gives the same Constant of 216 from each of its eight rows-of-three-integers (three horizontal, three vertical and two main diagonal rows).

This n x n x n Constant is the lowest that can be achieved when all numbers are positive. Can you fill in the relevant integers, before turning to page 39 for the solution?

PEOPLE

BIS appoints three associate directors

BIS Applied Systems has named three new associate directors. They are David Broughton, Tony Palframan and Sid Holmwood.

Broughton has been with the company since 1975, working on technical and management consultancy projects. He has recently been involved in the development of BIS structured techniques.

Palframan has been with BIS for six years, joining the Manchester office soon after it opened. He has latterly concentrated on all consultancy assignments in the Northern region and has taken general management of the Manchester office.

Holmood joined the company in 1975 as a consultant and manager on systems development and systems planning projects. He was also a driving force behind the company's systems development division.

Restructure at Calcomp

COMPUTER graphics peripherals and systems manufacturer Calcomp has restructured its UK sales operation, creating two separate sales divisions and a new regional management position.

Denis Avery has been promoted to UK sales manager, graphics peripherals division, from Southern area sales manager.

Russ Cockrell heads the second sales division (graphic systems). He has been with the company for two years, having joined to spearhead the company's drive into the turnkey CAD systems market.

Calcomp's first regional manager is Tim Marlton, who becomes North region manager responsible for sales, administration and field service support in the Midlands, North of England and Scotland.

£3,500 award for teenager

KEITH PURKISS, who developed the first colour board for the Sinclair ZX81, has won the £3,500 top prize in the Daily Express Philishave Get Up and Go Awards scheme.

Nineteen year-old Purkiss was chosen for his Haven Hardware, set up last July to design and market computer hardware products. These include a programmable character generator, rotating key module, input-output port, memory expansion and full size keyboard for the Sinclair ZX80 and ZX81.

The awards were open to 16 to 21-year-olds with a workable business idea or project.

Purkiss, from Workington in Cumbria, plans to spend his money on expanding his computer business.

■ Geoff Mandy has been named general manager of the control activity within the communication and control division of Philips Business Systems. He was formerly with AFA-Minerva, where for the past six years he has been marketing and engineering director.

■ Barrie Simpson has joined Rediffusion Computers as territory manager for the Northern region, based at Leighton Buzzard. He joins the company from Burroughs, where he held a similar post.

■ Alan Berry has been appointed technical consultant for United Computing's Northern region. He joins from British Aerospace, where he worked in the stress office on Tornado ADV and IDV.

■ Gordon Logan has been appointed sales executive at the micro systems division of Newbury Laboratories. He was previously operation manager at Kwit Fit Euro.

■ Zhenya Kirushkin, Pamela Delafield and Michael Newman have joined the sales team of Logical Machine Corp, Lomac. Kirushkin is Western regional sales manager, Delafield will manage the Eastern region and Newman is sales manager for US accounts.

■ Robin Shaw has been appointed head of CACI's new business information division. White Horse Distillers, BP Chemicals and Rank Xerox are among his first clients.

■ David Cook has been appointed regional manager for PA Management Consultants in the North-east. He joined the company in 1974 as a consultant.

■ Naim Awelda, formerly executive vice-president of field operations at Storage Technology in Colorado, US, has been promoted to president and chief operating officer. He has been with the company since 1969.

Keith Williams, managing director of Access Electronic Components (left) receives Texas Instruments' Distributor of the Year (1981) award from TI's marketing director, Alan Cartwright. The award is given on the basis of distributor performance against a 12-point checklist, the main areas being growth, inventory holding and general co-operation in TI's marketing programme. Access, based in Hitchin Herts, has been a TI distributor for less than 18 months. The company claims the industry's highest level of start-up inventory committed to one manufacturer, with over 2,000 product types in stock. Access has been in business since October 1980 and has a staff of 24.

Rair adds to sales team

RAIR is boosting its coverage of the market for the Black Box range of computers with two senior sales appointments.

Lloyd Greenwood joins the company as account director for the UK. He spent three years as an account director with ICL before joining Rair, and before that was a senior sales executive in the energy region at Sperry Univac.

Phil Royse will sell Black Box to major accounts in the South East. He previously spent a year selling the Wang VS range of minicomputers for general business applications, and before that was with Hewlett-Packard for seven years.

■ Alistair Forsyth has joined K3 Software Services, part of the Kalamazoo Group, as Southern sales manager. He was previously with Burroughs for 14 years.

■ David Bald has been appointed divisional manager at Rhone Poulenc Systems' computer media division. He has been with the company for seven years, and will remain divisional manager of the company's microfilm division.

■ Paul Abercrombie has joined Harrison Computer Services as a financial consultant. He worked for NCR for 17 years.

DIARY

APRIL 22

Computer graphics on television. BCS Coventry branch. Lanchester Polytechnic, Coventry. 7.30.

Microprocessors in building services. IEE. University of Strathclyde, Scotland. Details from IEE on 01-240 1871.

Film graphics. BCS South Yorkshire branch. Applied Science Block, University of Sheffield, Mappin Street. 7.30.

Communications – generally. BCS West Herts branch. The Culpin Room, The Pavilion, Hemel Hempstead. 7.45.

APRIL 27

Software engineering aspects of the SDL Gateway project, followed by AGM. BCS Software Engineering Group. BCS Headquarters, Mansfield Street, London. 10.30. Details Peter Wallis on (0225) 61244.

Installation visit to Percy Thomas Architects. BCS South Wales branch. 10 Cathedral Road, Cardiff. 7.00. Details R. Delamere on Cardiff 756053.

APRIL 28

PABX, speaker from Mitel. BCS Data Comms Specialist Group. BCS Headquarters, Mansfield Street, London. 6.00.

MAY 5

Computer privacy? Branch AGM, then debate. IDPM Central London branch. Altergo Software, Imperial House, 15-19 Kingsway, London. 6.30.

Japan the Golden – threat or promise? IDPM Sussex branch. Speaker Kevin Cahill, associate editor, Computer Weekly. British Caledonian Office, Gatwick Airport, Sussex. 7.00.

Presidential address and AGM. Speaker P. D. Hall, BCS president. BCS Manchester branch. NCC, Oxford Road, Manchester. 6.45.

AGM followed by computer-based information systems (videotapes). BCS Wolverhampton branch. Room C7, The Polytechnic, Wolverhampton. 7.00.

AGM. BCS Belfast branch. Drumkeen Hotel, Belfast, 8.00.

MAY 6

Microcomputer developments in the ILEA. BCS Central London branch. Charing Cross Hotel, The Strand, London. 6.00.

MAY 19

Ron Adam from British Telecom on the first year's experience running SwitchStream 1 packet switched service. BCS Data Comms Specialist Group. BCS Headquarters. 6.00. Details Peter Radford on 01-636 5440 ext 205.

The mainframe manufacturers want to keep a tight grip on their communications strategies, says Martin Hewitt

A plethora of protocols—and they're growing all the time

THE new fashion among those engaged in the Data Communications game is to exude a quizzical air while muttering the mysterious words "Open Systems Interconnection". These mystics could, if they are still reasonably young, live to see their prophecy come true.

Open Systems Interconnection is a fancy expression describing how, one day, all computers and terminals from every manufacturer will be able to hold "meaningful dialogues" with each other.

The boffins in Geneva under the banner of the International Standards Organistion have drawn a rather plain box, divided it into seven sections horizontally, and called it the ISO seven-layer model. Each layer covers various aspects of the overall functions of a protocol or language which will lead to Open Systems Interconnection (OSI).

So far only three levels have actually been agreed upon and are in current use under the heading X25. These first three levels provide us with the rules for creating a data path between one device and another, an error correction mechanism, and the ability to control the flow of data to and from an X25-based network.

Put another way, we have created the plumbing for a data network not unlike the wires, exchanges and dialling codes associated with the public switched telephone network.

Our own national data network PSS is a good example of an X25 network in action with links into many other national X25 networks. It would seem that we are well on the way to creating the Utopian world of Open Systems Interconnection.

Sadly we have barely scratched the surface and the worms beneath can already be seen.

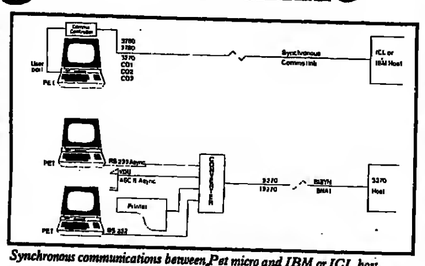
Going back to our telephone analogy, we can see that whereas we can dial a telephone number in France, how do we talk to the foreigner that answers if we cannot speak French? Esperanto would fit nicely into the seven-layer model in this case, but how many people are fluent in Esperanto?

Because computer manufacturers have grown up independently from each other, they have developed totally different languages or protocols for use when transmitting data over telephone lines. This enormous variety of protocols has led to great problems when trying to get equipment from one manufacturer such as IBM to talk to a system of differing origin such as ICL.

Smaller computer suppliers such as Computer Automation, Prime or CTL have had to bend to the will of the giants and emulate their protocols in order to give their customers access to the big mainframes.

But are the big boys co-operative when asked to help their little brothers write these emulators? We are now entering a grey and mist-enshrouded area.

Taking the case of IBM, one can purchase at very low price a good description of their earlier commonly used protocols such as 2780 for batch data transfer and 3270 for interactive screen applications. IBM in effect laid down the rules for these transmissions which subsequently were adopted as virtually international standards. As a result IBM found its market for terminal equipment attacked from all sides by plug compatible manufacturers offering better equipment at much lower cost. A similar story to the plug compatible disc and printer suppliers.



Synchronous communications between Pet micro and IBM or ICL host.

While the world awaits the implemenration of the theoretical ISO seven-layer standard, IBM has introduced its own multi-layer protocol known as Systems Network Architecture, SNA. This is so complex and so open to minor changes that it has posed real problems to anyone trying to design a piece of data communications equipment capable of attaching to a variety of IBM hosts.

Because many of IBM's new computers can only converse in SNA protocol, the user has until recently been far more constrained in his selection of compatible terminal equiment. Additionally if any IBM user wishes to make use of X25 networks such as PSS, he is first obliged to become an "SNA Shop" before IBM will provide him with X25 compatible software.

By the time the user has turned everything over to SNA he is well and truly in the IBM gaol, but the key has not quite been thrown away. Help is at hand.

Taking two more major suppliers, ICL and Honeywell, the problems are hit even before introducing the upper layers of the model. According to my mole buried deep in ICL Letchworth, it is virtually impossible to create a product capable of talking to its complete range of systems using the complex CO3 or full XBM protocol.

Although in exchange for large sums of used notes one can obtain the specifications or TASS's as they are ominously known, the protocol is sufficiently open to ambiguity to make the writing of an emulator to cover the range very difficult. Of course it's not intentional but is very convenient for ICL, if not its customers.

Finally taking Honeywell, it seems that it is easier to get two consecutive rounds out of a Scotsman than to get a write-up of their VIPS protocol. Not quite such a sophisticated cloak of secrecy as ICL and IBM, but effective.

With the grim situation outlined above, it would appear that the Big Boys should have all their communications users firmly by the short and curlies. However, necessity being the mother of invention, lots of small companies often founded by refugees from IBM or ICL have invented the protocol converter. This magical device is placed at either end of the line linking two dissimilar machines and, bey presto, they both talk to each other. That at least is the theory and surprisingly enough is very often the practice as well.

However there are so many different protocols in use today that only the more popular conversions are available "off the shelf" while others may be tailored to accomplish a specific task.

The market for protocol conversion equipment is so vast that there are more than 100 British and North American companies manufacturing little else.

The huge installed base of word processor and microcomputer computer equipment has led to the creation of a small industry making devices which enable them to communicate with the more popular mainframes. Because many word processing systems originate from the US, they can often communicate with IBM systems using the well-known 2780 or 3780 protocols for file transfers, but are incapable of talking to an ICL computer. Accordingly a UK firm has produced a magic box which converts 2780 or 3780 compatible systems to ICL CO2 or CO3 in batch mode without any interference with either machines software or hardware. This product virtually doubles the market for a supplier of 2780 compatible word processors when selling in the UK.

Much has been written recently about the benefits of connecting business micros into communications networks or mainframes. Again UK manufacturers have not been slow to plug the gap, especially for the popular Commodore Pet range.

A protocol conversion device which should be of great interest to users moving from ICL to IBM mainframes, or vice versa, takes a cluster of 3270 terminals and converts the composite line from IBM BISYNC to ICL CO3 interactive mode protocol. This saves the user the expense of replacing all his existing terminal and cluster controller equipment.

I hope it is now clear that you the user are not totally in the grip of the giants of the industry when it comes to selection of terminal equipment. The range of protocols covered by the converter manufacturers grows almost week by week. If it's worth doing you may be sure that someone somewhere is at this moment beavering away at a product designed to get you off the book.

Martin Hewitt is managing director of Jaguar Communications, a company specialising in protocol conversion.

The four-day Comms 82 exhibition will be held next week in Birmingham . . . David Casey talks to some exhibitors

A sure sign that the comms industry is reaching maturity

British Telecom has not installed digital lines quickly enough.

WHEN you discover that your local is online to a regional database, you know that the communications industry is achieving maturity. The decision by Allied Breweries to install a private viewdata network linking a cross-section of its licensed houses to branch computers and a page database indicates the extent to which data communications have penetrated the business environment.

Estimating the growth rate of the communications market in the UK, however, is more of a task for the Weatherman or amateur astrologer than an economic analyst. With the term "communications" encompassing every activity from internal telephones to the management of distributed databases, projections of market trends are necessarily imprecise.

If systems designed exclusively for speech are removed from the

reckoning, the residual market for data communications assumes a more coherent shape — crystallising into the three areas of software packages, specialist hardware and "bundled" comms devices.

The movement in the UK computer industry towards distributed processing — as indicated by exhibitors at next week's Comms '82 exhibition at the NEC — has stimulated the development of software packages to transfer files and program material directly between computers. Several inter-processor systems have been launched during the past year to provide error-corrected links over permanent lines or the public network. Wootton Jeffreys and Partners, for example, is a transportation consultancy which has developed Asclinet to handle communication primarily between Prime minis and a range of DEC machines.

John Henderson, one of the partners in the practice, identified two different requirements for data communicstions. "While there is a long-term objective of providing a link between a database and a computer with access rights anywhere in the world, the immediate concern is with transferring data from one computer to another. Half-inch magnetic tape has proved perfectly adequate in the past, but tape drives are not standard on micros. Asclinet takes advantage of the RS232 port which is common to all of these systems."

Growth in the demand for data comms software is reflected in sales of hardware interfaces. In the opinion of Roger Hills, of the Thorn EMI subsidiary SB Labs, the market is still growing rapidly. "There is no sign that the digital networks are having any significant impact on the market for CCITT modems."

Hills, the company's director of new business and planning, accepts that digital communications is the major area for growth, but maintains that it will provide a further boost for conventional product lines. "Digital systems will certainly replace conventional analogue devices in the longer term, but in the more immediate future the requirement for modems will double — these devices are required to link equipment on either side of the nodes on the digital network."

Nolton Communications is one of a handful of UK companies marketing interfaces to support all three levels of the CCITT X25 packet switching standard. As an intelligent device an X25 multiplexer combines hardware and software in a single unit so that no modification is required to existing resources.

Bob Winch, Nolton's packet communications specialist shares Roger Hills' view of the digital market but sees a constriction in its growth rate during 1982. "Acceptance of packet switching over the public network depends on British Telecom's ability to install lines at a sufficiently high rate. Their track record to date has regrettably failed to meet our expectations."

Given this potential setback, Winch believes that packet switching will become the dominant communications medium during the 1980s for companies with a high demand for data transfer. "Insurance companies, building societies and credit referencing are obvious applications for the technique. The capital cost of around £5,000 for a multiplexer box is shared between all the terminals which would be linked through it. When British Telecom clears the bottleneck, X25 really will be a cost effective solution to data communications."

Underlying this aspect of Nolton's marketing philosophy is the belief that greater use will be made of centralised resources: a single mainframe computer and database can service an increasing number of remote terminals. Few remote sites will be manned by computer specialists, however, making it essential that interaction between an operator and the system is as simple as possible. The absence of trained computer staff poses a further problem for network maintenance.

Computer Automation has overcome the first of these obstacles through the medium of private viewdata. SyFA computers — CA minis with disc storage — provide local processing with transport access to a host computer. When first introduced four years ago, SyFA systems could support devices such as hand-held terminals and handwriting pads, but still required an element of computer discipline when data was to be recovered from a database.

Viewdata technology, handling multi-colour graphics on a conventional television screen, was recognised by Computer Automation as an ideal interface for remote users without a background in computing. The SyFATEL option on SyFA enables terminals with a viewdata converter to access and generate pages of data totally compatible with Prestel standards. Allied Breweries is implementing this facility as an electronic message switching system on its existing SyFA installations. Messages for executives travelling around the UK will be accessed when the addressee's personal code is entered through a viewdata set hooked up to the network.

One component of the SyFATEL software provides transparent access to other SyFA databases within a network, while a third tier of programs allows data held on an IBM CICS database to be converted automatically into Prestel page format. The information is brought in to a local SyFA page database, so that the operator can access the information through the viewdata terminal.

As suppliers of modem devices for integration within otherwise standard television receivers, the Thorn Group is aware of the potential for viewdata as a data communications technique.

The reliability of a data comms facility is as important as its user-friendliness and the cost of hardware. Since the effect of distributed data processing is to take computing resources into a non-computing environment, there is unlikely to be a competent systems engineer to handle problems. A market sector which will therefore play an increasingly important role is network management and monitoring. Diagnostic software is the minimum level of protection required by a user: in the event of a system collapse, there is sufficiently detailed indication of the cause before expertise is called in from the supplier. Remote diagnostics — in which the problem is identified from the central processing site — allow a network to be monitored without relying at all on the operator.

In the Intertel 90/10 network control and management system being introduced at Comms '82 by Data Logic, the remote diagnostics are integrated with facilities for monitoring network utilisation. Martin Benson, Data Logic's data comms product manager outlined the requirements for such a system. "Test equipment has become increasingly sophisticated and needs skilled engineers who are at premium — assuming that they are available in the first place. With central site control, an alarm system shows remote failures. On the management side, the demand is for improved statistical information on network performance."

DATA COMMUNICATIONS—3

Managers can gain access to their company's central computers in a number of ways . . . . Eva Huzan explains

Managers will find that a terminal with direct access to the company's central mainframe is far more valuable than a standalone microcomputer.

Linking up to fast and flexible information

ONE of the greatest needs in any organisation is for a fast and flexible management information system. Although most medium to large companies have one or more main computers that may be accessed through terminals, there is often weakness in the direct availability of management information.

Departmental managers, in many cases, are not gaining easy access to mainframe files and instead are purchasing microcomputers for use in their offices for applications such as financial planning, budgeting and purchasing.

This is not satisfactory from many points of view. The manager can see the potential of his micro for essential management decisions which require access to central files. The data that he is processing locally produces information that should be stored and controlled centrally and linked back to mainframe applications.

Solutions to these problems can be found through the use of the improved means of communication, sophisticated but user-friendly workstations and office automation software now becoming available. The range of hardware and software is continually being extended, giving a wide choice in both facilities and price.

The most common means by which we currently communicate with computers is by dumb or intelligent terminals; the latter often have their own microprocessors

DATA COMMUNICATIONS

providing programmable function keys and screen handling facilities. The range of terminals we can use with a particular computer will depend on the communications protocols supported by the devices; most support the main IBM protocols. Microcomputers also can be used as intelligent terminals provided appropriate communications software and interfaces are available.

Data from central files can then be accessed through the microcomputers and processed locally using proprietary software packages giving facilities such as colour graphic displays. Updated files can be transferred back to the main computer for storage.

Further flexibility can be provided by microprocessor-controlled Private Computer Exchanges, PACX systems. These allow a number of different types of terminal to be connected automatically to the ports of different computers. Users are queued by the system until a port with the required class of service becomes free.

The systems manager can access a range of control facilities through the PACX enabling him to reconfigure the network, reallocate ports giving different classes of service and monitor the status and data activity of ports or terminals. This means that savings can be made and greater flexibility achieved by giving users access to a variety of computers through one terminal or workstation.

Another type of system proving popular with departmental users is based on viewdata technology. There are several different private viewdata systems which have file and display formats compatible with Prestel. The systems can be used as internal management information systems or give access to Prestel over a modem link. An important extension is in the provision of gateways to mainframe computers.

Mars Group Services markets the PVS 990 Private Viewdata System, which is based on the Texas Instruments DS 990 series. This uses low-cost adapted TV sets as user terminals. A gateway link using the 3270 protocol is provided for communicating with IBM mainframes. User exit facilities allow PVS users to write their own application programs in Basic, Cobol, Fortran or Pascal which use the main database held on the mainframe. Users may use existing mainframe programs or most of the processing can be done at the viewdata end requiring only a simple database interface at the mainframe end. The aim is to allow users' applications (eg a simple order entry system) to be implemented more quickly with minimal assistance from the DP department. This means the mainframe can be used for the major tasks it is best suited for, such as maintaining and controlling central files (the corporate database).

Users find the viewdata system is easy to use and gives a good presentation at low cost.

The Bulletin viewdata system available on ICL mainframe computers allows users to look at DP files through a Window program. Full security of files is maintained through the identification of users by name and passwords. Each page on the viewdata base can be separately protected by having separate passwords. Software is available for automatic formatting (using preset colours) and routeing giving managers access to about 40 pages/minute containing information, for example on corporate plans and financial performance, which is normally held on mainframe files.

An approach, that is increasingly becoming popular, is to link the many different devices that are to be found in offices through a private digital exchange, PDX (also known as private automatic exchanges, PABXs). Systems are being provided by Plessey, ITT and ICL (through its collaboration with Mitel). The aim is to link computers, terminals, word processors, workstations, telex and facsimile machines through the PDX to provide a communications system integrating voice, text, data and image information.

Since existing twisted pair telephone wires can be used, it is possible to put a data terminal, incorporating a handset, where there was previously a telephone. Voice and data can be sent down the same pair of wires using time division multiplexing techniques. Equipment has been designed to allow voice and data to be accessed from a terminal through the PDX.

The connections to services, networks and mainframes are made possible through PDX interfaces (gateways) which handle the protocols for different computers. An integrated communications system needs the facility for adding gateways for any new system, eg Telerex, packet switching, electronic mail, various mainframes and word processing systems, Prestel, internal viewdata systems.

Another communications technology, local area networks (LAN), has also created a wide interest. LANs are designed to allow communication over a dedicated cable between a number of computers situated on one site. Several different types of LAN have been developed.

The selection and successful implementation of any of these alternatives requires co-operation between computer-aware managers and DP personnel. Courses are being provided at colleges for both these groups.

Many managers have got over the initial problems that beginners face when using computers. A range of post-experience modules for business managers is becoming available through the Business Education Council. These cover topics such as computer studies, programming, data processing, information technology, social and organisational aspects of modern office systems. Each module comprises 60 hours of study.

During the Eighties we will see further integration of computing and communications technologies which will make the realisation of true management information systems possible. It is essential that DP departments become involved in the new technology so that they can take a lead in setting up these systems and in controlling the corporate database, which is one of the most vital resources in a company providing essential information for decision making.

Dr Eva Huzan is head of the Computing Division at Slough College of Higher Education.

DATA COMMUNICATIONS—4

Cost is a major factor in linking various makes of microcomputer. Dr Eva Huzan looks at some alternatives

How to choose your local area network

ALTHOUGH microcomputers appear to have emancipated users from their dependence on centralised systems, the cost of dedicated peripherals can often be totally out of proportion to that of the microcomputer. Local area networks (LANs) have emerged as a solution, but anew problem arises: How does one make a choice from the diverse alternatives, which vary greatly in cost?

The lowest cost networks are generally designed to link particular makes of microcomputers. For example, the Nestar Cluster/One system marketed by Zynar, links Apple microcomputers to each other and to file, disc and modem servers. This system allows a wide range of applications software to be used since a user has a choice of three different operating systems at his workstation — Apple DOS, CP/M and Pascal — and a range of programming languages. The

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system is in use in a variety of organisations including Zynar itself.

Typical applications are word processing, data processing, financial planning, electronic mailing, internal viewdata and a modem link to Prestel or to other networks or computers. A convenient way to use the system is to wire up the building with the 16-way ribbon cable that is used to link the user stations and servers. User stations can then be plugged into jack sockets when required. Unplugging a station while the network is in action does not affect other users on the system.

Another low-cost network is Acorn's Econet which can be used to link Atom or BBC microcomputers. Econet is being used in education for sharing disc files and printers and also provides a facility for the teacher to look at the activity on any of the microcomputers on the network and to send messages to these micros.

Zilog's Z-Net network is used to link the company's Z80A based microcomputers using a single coaxial cable. Both Zilog's RIO/CP (Concurrent Processing) and Digital Research's CP/M operating systems are available with the usual range of programming languages and business applications. Research Machines microcomputers, used in educational and research establishments, may also be networked using a Z-Net system.

Extel's HiNet is another network for linking its Z80A-based microcomputers. All these networks are passive systems so that when a workstation on the system fails the rest of the system continues to operate.

Sophisticated software is becoming available on these low-cost networks that includes facilities previously found only on larger systems. For example, the Scorpio production control package being developed by Tamsys for running on HiNet uses MDBS (Microcomputer Data Base System) which is a Codasyl-based database with good security and recovery facilities. Access level numbers can be associated with different records in the database.

Users of the system can have read and write access to individual records in the database only if they have the appropriate password and a high enough access level. The recovery function in MDBS can be used to log all updates so that these can be reprocessed after a system failure. MDBS also has a comprehensive query language (QRS) and a dynamic restructuring facility (DRS) which reduces the amount of maintenance time required.

Turning to networks that are not tied to a specific manufacturers equipment, the most publicised is Xerox's Ethernet, developed in collaboration with DEC and Intel. The Ethernet cable is a passive coaxial cable carrying data at 10 Mbits/second. Devices which conform to the Ethernet specification include workstations, word processors, computers, storage units and printers. These are connected to the Ethernet cable by transceivers; the latter are used to detect whether the Ethernet cable is busy.

If more than one device tries to transmit information at the same time, then a collision can occur and this is detected by the transceiver which sends a jamming signal to inform the other transmitting stations involved in the collision. Colliding stations then back off and re-try at a random interval of time. Workstations can be clustered and moved around by moving the clamp at the transceiver end.

Services available on the network include filing (file management) and electronic mail within the file server, electronic printing (using laser technology), communications to allow remote devices to access the network or to allow devices on the network to access mainframes within a range of protocols.

Net/One from Uogermann-Bass (supplied by Thame Systems) is a network based on the full Ethernet specification. A simple interface module replacement allows a device on Net/One to be connected to a broadband cable via a modem. This permits voice traffic to be carried on a separate channel, so obviating one of the main criticisms made against Ethernet.

Broadband networks can carry traffic across a wide range of frequencies, allowing all types of information (data, text, voice and image) to be carried simultaneously as required for modern office systems. Wang's high capacity system (Wangnet) uses conventional cable television technology. Current facilities include high speed resource sharing between Wang systems and emulation of conventional modems to allow linking of non-Wang facilities. Future video use will include video conferencing, electronic notice boards, classroom facilities, and security monitoring of doors/gates. RF (radio frequency) connections will allow environmental control of heating and lighting.

Another broadband system is Sytek's LocalNet (supplied by Network Technology). This can provide simultaneous communication between a large number of devices, using a single coaxial cable with reserve capacity for video and voice.

Britain's main contribution to the scene has been the Cambridge Ring which allows a variety of computers and devices to be linked, including NC tools, facsimile units, plotters, test and research equipment. The network was developed at the Computer Laboratory of Cambridge University but several implementations are commercially available.

Each computer or device is attached to the ring through a station or network node. A power source is connected to the ring together with a monitor station for controlling the traffic on the ring. Data is transmitted in packets which circulate around the ring so that at any one time a number of packets are being carried for different destinations from different sources. The transmitted packet is eventually returned to the transmitting station with changed status bits to indicate whether the receiving station has accepted or rejected it. Although data is transferred from node to node at 10 Mbits/second, point-to-point rates are much lower depending on the number of nodes and the amount of useful data in the packet.

Another system developed in the UK is Xibus manufactured by Xionics and supplied by Master Systems. According to Xionics chairman, Mike Bevan, the system uses much longer packets than the Cambridge Ring and includes a great deal of duplication for increased reliability. Connections to the ring are made via intelligent sockets which control the transfer and receipt of data to and from succeeding and preceding intelligent sockets. Microprocessor-based multi-function workstations may be plugged into the intelligent sockets and can be used for electronic mail, personal computing and simple graphics.

A Xibus system has been installed in the IT unit of the Cabinet Office as part of the DoI pilot scheme.

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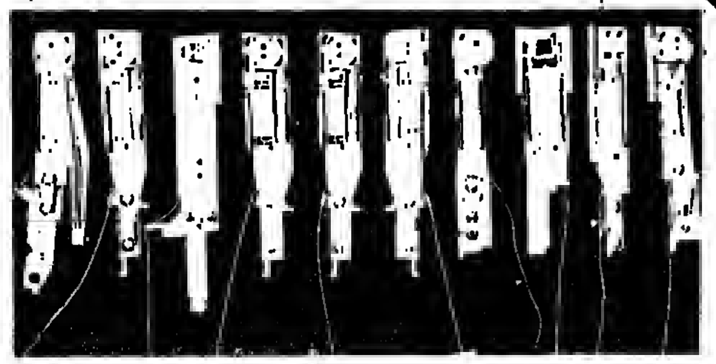

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(9178)

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(8169)

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Further details and application forms from the Deputy Administrator, Oxford Polytechnic, Headington, Oxford OX3 0BP.

(9190)

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Application forms available (quote E934) from: The Chief Personnel Officer, PO Box 98, Municipal Offices (Floor 8), Smith Street, Rochdale OL16 1XG (tel. 47474 ext. 662), to be received not later than 30th April, 1982.

UNIVERSITY OF BIRMINGHAM
Department of English Language and Literature

Computer Officer

The University expects to appoint to a post of Computer Officer in the Department in the near future. Applications are accordingly invited for the post: particular consideration will be given to candidates with some linguistic experience. Expertise in computer programming and text processing is essential.

Appointment will be to Computer Officer IB on the scale £5,295-£8,925 and will be for one year as from the date of appointment. The University would prefer to appoint at the lower end of this scale.

Applications (10 copies) naming three referees, should be sent by 18 May, 1982 to the Assistant Registrar (Arts), University of Birmingham, P.O. Box 363, Birmingham B15 2TT, from whom further particulars may be obtained.

(9200)

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Salary will be in the range £8,100–£8,733. Benefits include superannuation scheme and removal assistance where appropriate.

Application form and further particulars are available from the Personnel Manager, District of the Wrekin Council, P.O. Box 213, Malinslee House, Telford, Shropshire TF3 4LD. Tel: 0952 505051

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Project Leaders
Inner London: Salary to £13k + car

Our clients, in the throes of upgrading their existing installation intend to offer extensive on-line facilities to both existing clients and staff. The Company has an urgent requirement for several Project Leaders specifically to participate in the implementation of a comprehensive range of new broking and trading facilities. Of particular importance will be those who have an appreciation of broking, commodity trading and the futures markets. It is anticipated that successful applicants will be actively involved not only in the recognition of new in-house computing facilities but also participate in feasibility studies, systems design, implementation and live running. Those candidates with previous Real-Time COBOL programming experience will be especially favoured. You will be required to undertake brief visits to our clients' European partners where similar systems will be under simultaneous development. Ref. L/15/A

Process Control Systems
Central London: Salaries to £15k

A Systems and Software House, with an excellent reputation for providing total systems solutions, has a number of vacancies for Programmers and Project Leaders with at least two years' Process Control systems experience. Suitable candidates for the senior positions will be required to have had responsibility for system hardware procurement, installation, commissioning and software generation, preferably in the chemical or oil industries. Applicants for the Programming posts should be fluent in an Assembler and a high level language such as Pascal or RTL/2. Although the vast majority of work is in-house, occasional visits to client sites will be required and a degree of mobility is, therefore, essential. Ref. L/15/B

Pascal Programmers
Inner/Greater London: Salaries to £10k

A number of Applications Programmers who are fluent in Pascal, or any other block structured Language, are required by a leading supplier of Business and Communications Systems. Two years' applications software development experience is essential, as is exposure to mini or micro-based systems. Particular applications areas should include financial modelling and electronic funds transfer or, alternatively, process control or data communications systems experience. The vast majority of time will be spent on in-house development projects but, during systems trials and commissioning, visits to client sites will be necessary and, therefore, a willingness to travel occasionally will be required. Ref. L/15/C

IBM Systems Engineers
Inner/Greater London: Salary to £14k + Car

Our clients are acknowledged as one of the leading suppliers of IBM-based software systems and business packages. The well-established U.K. Operating Division is seeking a number of Systems Engineers for its permanent establishment. All candidates must offer a minimum of 18 months' systems engineering involvement with considerable "hands-on" exposure to at least two of the following: MVS, IMS, CICS, IDMS, ENVIRON, TASKMASTER, TOTAL or SHADOW. A salary premium will be paid to those who are fully familiar with the generation of new software releases and the implementation of a total package from installation to customer acceptance. Consequently, these posts will entail a certain degree of customer familiarisation, where excellent personal communication skills are vital. Since all positions carry a fully paid Company car, all applicants will be required to travel both nationally and internationally. Ref. L/15/D

MACRO 11 Programmers
Italy: Package to £14k

A leading British Systems and Software House with offices throughout Europe is currently seeking additional MACRO 11 Programmers for its Italian operation. Suitable applicants should be graduates with a minimum of two years' Real-time programming experience on a PDP 11 configuration running under RSX 11-M. Fluency in MACRO 11 is essential, but applicants who offer additional skills in FORTRAN or PASCAL will, of course, be of interest to our client. Those who have worked within an environment where X25 facilities are in extensive use are particularly encouraged to apply. However, if you have some knowledge of networking or data communications techniques then you will also be considered for these positions. Ref. L/15/E

Firmware Progs/Designers
London & W. Home Counties: Salaries to £11k

A young, dynamic consultancy, operating under the MAPCON scheme, has a number of vacancies for Programmers/Designers with a combination of hardware and software skills. Of special interest will be applicants who have experience of designing microprocessor-based instrumentation systems from board level upwards. At least one degree in Computing Science or Electrical/Electronic Engineering is essential, as is two-three years' industrial environment. A high standard of Production Documentation is extremely important since many of the projects which successful candidates will be engaged on will be for external customers. Ref. L/15/F

Viewdata Systems
N. Home Counties/London: Salaries to £12k

A number of vacancies for Programmers and Analyst/Programmers have arisen in the Applications Development Department of a Total Systems Supplier which specialises in the private viewdata market. Candidates should be graduates in a numerate discipline and have two years' applications programming or software design experience. Fluency in either FORTRAN or an Assembler language is essential. Particular hardware exposure is not required but applicants currently working on PDP/RSX-11M or VAX/VMS configurations will be preferred. For those able to offer fluency in either French or German there will be many opportunities for overseas travel. Ref. L/15/G

Real-Time Programmers
Hants/Surrey: Salaries to £11k

Real-Time Programmers are urgently required by the design and development division of a renowned Systems and Software Supplier based on the Hants/Surrey border. Suitable applicants should offer a minimum of 12 months' programming experience in a Real-Time mini or microcomputer environment. Particular hardware skills are not important but a salary premium will be paid to applicants who have had some exposure to UNIX-based systems. It is essential, for all positions, that you offer fluency in at least one of PASCAL, FORTRAN, C or Assembler. Working as a member of a small team, you will be involved in projects which include data communications, process control, simulation or networking. Ref. L/15/H

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The Post Office

(9174)

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(9181)

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Application forms may be obtained from the County Surveyor, Tipping Street, Stafford ST18 2LP (quoting post no: 2201179 – Computar Section).

(8189)

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Systems Analysts — to £14,187

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GREATER MANCHESTER JOB OPPORTUNITIES—1

As the recession shows signs of easing off, the DP job market is rapidly picking up, reports Eugene Dempsey

'Suddenly there is too much work and not enough people'

THE universal talk of recession and gloom is now being replaced increasingly by a fast-growing air of confidence on the Greater Manchester computer scene. And, according to Vic Groves, head of VNG Professional Services, there are good reasons for this change for the better.

"We are confronted by an amazing scene in which there is suddenly too much work and not enough people. I have never known it in the busier during the 12 years I've been in this business, and the situation is building up a head of steam that indicates that the next three years could be very exciting."

In saying this, Groves contrasts it with what he calls "the tremendous over-supply situation" during the past couple of years which left a big volume of computer skills lying fallow from a lack of job placement demands.

"The recent years of recession-influenced problems can now be likened to the computer industry being pulled back like a catapult," he says. "Now things are starting to lift off quite dramatically on the strength of the rapidly expanding activity one can see at most of the major computer manufacturers – notably DEC, IBM, ICL and Hewlett-Packard, and to a lesser extent currently at Honeywell and univac.

"This resurgence is especially apparent at ICL, where there is a great deal of movement right across the range and one can expect an awful lot of exciting developments related to major ICL projects during the next few years."

Although this positive trend is clearly discernible across the full spectrum of computer skills and related jobs and opportunities, it is somewhat unusual that a dominant role is being played by the very senior personnel.

There is a particularly strong demand for systems analysts and consultants – a big change from a market that has been almost entirely programmer-dominated in the past.

At the same time, today's accelerating search for such key systems people obviously promises a lot of programming jobs in the pipeline during the next few years.

In the wake of this start to a Greater Manchester computer jobs boom is an almost-forgotten phenomenon – earnings levels are starting to move up noticeably for the first time in at least 18 months, in response to the fact that the supply/demand balance has tipped in favour of the "seller" of skills.

This has forced employers to increase the cash incentives to compete in the hectic marketplace currently facing them. The freelance contractors are now finding their jobs especially rewarding. As Vic Groves says, "The more mobile the contractor, the better the rewards so that there is now a damned good living to be had."

He underlines this with one impressive statistic during April, Knutsford-based VNG will have no fewer than 100 people out on contract work – and "to sign up for a year's contract is now becoming commonplace, and some contracts are even for two years."

This indicates that a definite longer-term strategy is re-emerging which involves the initiation of the kind of major new projects that have been largely absent from Greater Manchester for a considerable time.

In general, the region now has a significant number of new machines around to add to the job prospect equation, among which the IBM System 38 looms large. There is also much new software making additional demands on some of the skills that have remained latent during the long downturn.

VNG also points to the heightened activity at Ferranti, where the emphasis on defence systems shows that this specialised sector is big business.

Indicative of the new feeling of buoyancy in the area is the fact that the significant "brain drain" out of Manchester in recent years has not merely been arrested, but has been sealed by an increasing return to the fold as computer people are attracted back into a recovering industry.

VNG is in a good position to weigh up the new job trends in Greater Manchester from its own well-established vantage point, in which it is currently gaining a lot of new clients (including five more in the past month) to add to an existing line-up of blue chip clients which includes such as ICI and Woolworths.

The company sees the favourable trend posing almost as big a challenge to personnel recruitment organisations as that forced upon them by the recession.

Comments Groves: "Agencies prepared to move through those traumas with an open mind and an attitude of flexibility that embraced an element of prudent 'wheeler-dealing' have emerged relatively unscathed and well qualified to handle the growing proliferation of demands for computer staff.

"The buyers' market of the past two years, with employers firmly in the driving seat, is being replaced by a sellers' market which promises better margins both for the agency and its contractors. The best now is to ensure that this tempting situation is not milked because employee and agency hold the whip-hand."

Just as the recession was thing of a sort-out time for employers could select cor recruitment agencies at w thus tended to shake out w considered to be less s partners, it is felt that cover has flipped it is incumben the recruitment specialists have responsibility at hand for them is a highly dominat ronment.

Thus the more stable an – those whose staff mor relatively low and thereby c lasting relationships to be lished and maintained – n ones most likely to surv upturn.

They will only do this by strong links with client seeking computer firms t policy of satisfying them with modest profit margins than the more spectacular ums, that some might get with during a period of "fam work, not enough computer

"Now a damned good living to be had."

GREATER MANCHESTER JOB OPPORTUNITIES—2

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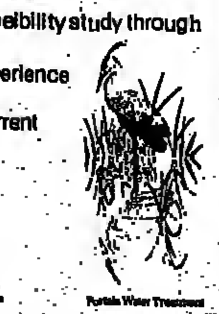

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SALES BIT

Quality of Management – 5

Let them know you understand their problems

LAST week I wrote about the difficulties of selling in a territory located far away from head office or even in a regional office, and the problems of salespeople who are obliged to work from home. In particular I touched on communications between the sales manager and those members of the team who find themselves selling in this environment, and the merits of regular correspondence, especially if the topic is one of appreciation for the salesperson's efforts.

However, there are other events within the sales manager's range of activities that demand written correspondence of other kinds.

While written statements are typically less subject to misinterpretation than their verbal counterparts, they still have considerable potential for ambiguity, particularly if produced in haste.

Added to this is the unerring capability of some individuals to misunderstand everything, and some matters which by their very nature stimulate suspicion and provide the perfect excuse for every recipient to put the worst possible meaning on every syllable.

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The instinctive reaction is almost certain to be "Where's the catch? How does it work to my detriment?" Believe me, no memorandum justifies the maximum investment of time in preparation than one which changes the rules.

As I mentioned recently, one hallmark of the incompetent manager is the retreat into rhetoric and technical gobbledegook – hiding behind ambiguity and points of order.

If people in the field receive vague communications, they are likely to suspect deception and may assume incompetence. Saying what has to be said in a clear and concise manner with total consideration of potential misunderstanding is an essential management skill.

Having said that, a sales manager who does not communicate with the team at all is far worse than one who deals in ambiguous memoranda. Discovering that prices or delivery periods have changed by way of a client query, or having one's first introduction to a new commission structure via a pay-slip, is sure to anger and demotivate the most ardent staff. Yet one-way communications appears a common aspect of many sales organisations.

The other important element of this communications process is the need to explain why, particularly on the emotive topic of change. It is not good enough to state that the rules have changed and simply leave it at that.

Salespeople generally react badly to autocracy and this kind of edict, no matter how well intentioned, can cause considerable unrest and consequent demotivation.

Look at it from the salesperson's point of view. As a result of territorial readjustment he has just lost Greater Manchester and three major prospects generated over the past 12 months and inherited instead North Wales and half-a-dozen bad debts. Surely there has to be a reason – and don't tell me this sort of thing isn't ever done by memo!

And what about the client who asks why the price has been increased, or why his version of the operating system is no longer being maintained, or delivery of the kit on order has gone from three months to nine months, or why your firm has just been taken over by the Elephantine Fruit and Vegetable Company?

If you don't tell the sales staff, how can they justify the actions of the company?

Change must be explained to people in the field, and it must be justified. Democracy is a great motivator but totalitarianism is the death of a salesforce.

Out in the sticks the salesperson's sense of isolation is diminished or exaggerated in accordance with a variety of emotional factors such as sales success or failure, operational frustration or encouragement, good or bad weather, domestic quiet or unrest, mental tranquillity or pressure, and so on.

It is within those low, as opposed to high, periods that salespeople need to know that there is someone somewhere who understands their selling problems and will help them exploit their opportunities.

At any time, good or bad, salespeople working alone must have the constant encouragement and confidence that comes from knowing they are part of a team which can be relied upon to provide support and share experiences.

This type of confidence is unlikely to prevail where there is a low or negative level of communications between the remotely located salesperson and the manager at head office.

So next time you write a memo to the salesforce, assume you are writing to a paranoid salesman in the Shetlands. It could increase your communications capability considerably!

Alan Williams

PUZZLE ANSWER

18	1	12
4	6	9
3	36	2

(The columns can be swapped around in various ways, but the integers are always the same.)